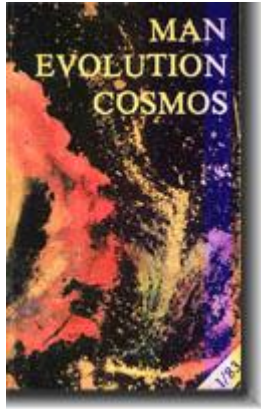


# Can we put a new meaning into the idea of personal immortality

29 August 2011  
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*"If death was a good, the gods would not be immortal..."; Sapho*



*This article has been published for the first time in "Man Evolution Cosmos" Volume 1 / 1983*

The idea of personal immortality arose in remote antiquity, later it came into play over and over again, above all in religion and also in philosophy and the natural sciences, it was discredited but again revived. Is it necessary to go back and consider this idea after its having been subjected to a detailed critical analysis<sup>1</sup> from the dialectical materialistic point of view no so very long ago? Yes, it is necessary, and maybe now not so much from a negative position but rather to preserve some positive points in it, ones that may prove useful in giving meaning to certain concrete scientific results.

We can begin with the most general conceptions about the aging and death of living organisms. The elucidation of the nature of these phenomena is one of the fundamental tasks of general biology and gerontology. There is an impressive number of different 'theories' about aging and death, but actually most of them are of significance only for the historical study of the progress made in gaining knowledge in this area. They are built up on erroneous methodological foundations, considering the particular, the secondary phenomenon as the primary, the general, the leading one and they do not explain the general regularities of the phenomena in question<sup>2</sup>. The thesis that the processes of aging and death in the organisms are expedient biological phenomena bound up with the development of the species<sup>3</sup> is widespread and has gained recognition. As A. B. Kogan pointed out, one of the fundamental inconsistencies arising in the development of life rise in the breach between the stability of the forms of self-regulation of living systems and the mutability of the environment. The resources of the environment being limited, inevitably the first step of evolution should be the emergence of mechanisms for changing the forms of self-regulation and self-restriction of the growth of living systems. Thus an unceasing stream of life transforms itself in discrete cycles. Here it is a matter of the emergence of an 'active' supplementary regulatory mechanism which, at a definite state of the ontogenesis enters into a struggle with the mechanisms safeguarding life and cuts short its course.<sup>4</sup> In this manner aging and death 'represent active destructive functions of the organism, phenomena of the biological expediency of the species'<sup>5</sup>. It must, however be emphasized that life does not carry death in its primary nature, but in the secondary laws of evolutionary development under definite conditions.

It is natural that this notion of aging and death underlies the criticism leveled at the idea of the religious immortality of the soul, of worlds beyond the grave and so on, and substantiates the thesis that in aging and death there is nothing mystical and supernatural. As John Bernal notes: 'Now we must accept death not as our mystic lot imposed as a punishment by a jealous god, but actually as an inheritance, ensuing from biochemical facts and processes...<sup>6</sup>, as the result of the fact that we have inherited bodies for which death is the normal end'. Some authors, however, go further and, carried away by their zealous endeavor to oppose the religious delusion to the bitter end, try fervently to convince their readers that, since death is a biological necessity, it is natural and acceptable both for animals and man, that man must be resigned to it and accept it as an inevitability.<sup>7</sup> Such a position is going too far, does not reflect the things in their true light, is not heuristic and sounds unconvincing. A number of arguments can be brought against it. First, man is, of course, a biological organism, integral formation comprising within him both biological and social forms of movement of matter in a definite kind of subordination. The uniting of the biological and the social form of movement in man on an individual and social level is being realized on the basis and under the hegemony of the social form of movement<sup>8</sup>. At once the conjecture arises as to whether aging and death, which are self-regulation mechanisms on the level of the biological forms of movement, do not enter into contradiction with the phenomena of the social form of movement. Could it be that in man aging and death are turned into a phenomenon inexpedient for higher form of movement - for the social one? We cannot simply reject this conjecture; it must be examined in detail because there are a number of phenomena of similar inexpediency. Second, in spite of all exhortation and suggestion, people feel aging and death as a personal and social tragedy<sup>9</sup>. Of course, there are deviations from the general feeling, exceptions to the rule: those who are bed-ridden and tortured by severe illness or those who are fettered and wasting away in dungeons welcome death as an escape; the superannuated, who are isolated for a long time before their physical death from the community in which they live, face it with indifference and apathy; those who have dedicated their lives to some cause meet it with calmness and courageous firmness. The overwhelming majority of people, however, is afraid of death and strives to put off the fatal end. Unlike the whole vegetable and animal kingdom, people are endowed with the ability of being conscious of the surrounding reality and of themselves, have developed self-consciousness (their 'Ego'). Perhaps that is why they react so violently to death. 'To die is not terrible; what is terrible is not to live' (Henri Barbusse), it is not the process of dying they fear, not the pain and agony, but the fact that they will vanish from this world for ever, that the flame of their "Ego" will die out for ever and ever. The verses of both ancient and modern poets sound sad and hopeless when they turn their minds to the unavoidable doom of the individual existence. Third, that which is a complete tragedy for the individual man as subject - his own organism, in spite of his jibbing at it - is a regressive moment also in social development. For the community aging and death mean the unceasing amortization and destruction of already well shaped, creatively developing personalities. It is well known that, once it has emerged, human society, developing historically, has no longer any need of genetic evolution; natural selection has lost its significance for man as a race and species forming factor<sup>11</sup>. This gives rise to immediate doubt as to the expediency of death as a mechanism for changing the forms of self-regulation in man, even in the pattern of the whole of society. Besides this, death leads to the destruction of the socially useful information that has accumulated and organized itself for many years in the brain of the individual. Naturally, knowledge and experience are handed down from one generation to another, but this manner of handing them on is not perfect and not uneventful, ever-growing difficulties arise<sup>12</sup>. It must be said that within the framework of our contemporary human society, with the established way of life, there would arise a number of unsolvable problems if aging and death did not exist - first of all. There a crisis would arise in the form of overpopulation with all the things, which accompany it: shortage of fuel and electric power, hunger, environmental pollution, etc. But these problems should certainly not be tackled only on the basis of the notion of the non-existence of death. So that the analysis should be correct, it is also necessary to have a 'model of immortality' available, and then to draw our conclusions about the existence of definite crises and the possibility of overcoming them. In any case, the harm done by aging and death is obvious, while the usefulness of these phenomena in man is very doubtful, particularly if we weigh up their value for the future. And fourth, science, in particular anthropology, cybernetics, philosophy in the epoch of the techno-scientific revolution, has arrived at concepts, ideas, which allow it to turn again, already suitably equipped, to the problem of the limited individual existence and the development of man. The new ideas and facts require, on the one hand, that the proper meanings should be given to them and, on the other hand, they make it possible to build up a new approach to the personal immortality of man. This makes it necessary to reexamine our old positions in respect to this question.

And so we ask in what does the idea of personal immortality consist? Personal immortality - that is the direct existence of man as subject, his consciousness and self-consciousness, for an indefinite length of time after the death of the organism. The memory and the consciousness are identical in themselves and to remain basically undestroyed. Of course, the memory will not preserve all the details of the past life, but it will keep enough of them to give the feeling of identity and continuity. It is not necessary to dwell in detail on the origin, development and disrepute of the idea of personal immortality in the history of human culture - that has already been

done<sup>13</sup>. But it must be emphasized, in agreement with K. Lamont, that the idea of personal immortality is more important and more primary than the idea of any god. K. Lamont writes: "It would be silly to deny that the majority of people consider the idea of God and the idea of immortality to be ideas inevitably linked together, ideas which exist together and perish together. But the inevitable link between the concepts and the things does not always involve their being of equal value. If, on the one hand, it is accepted that the existence of God already in itself means the existence of life beyond the grave, then this is because in the definition itself of God, his ability to guarantee immortality is suggested. Although the guarantee is, of course, important; what is guaranteed is, in the final count, the chief thing. It is this which interests people...<sup>14</sup>. The primary concept of immortality is in reality very simple and natural, it arises quite easily in man without any pressure from outside. Children and primitive people take incensancy of life for granted and have to be persuaded into believing that death really does exist. But the idea of God was something, which arose later, and it was with much greater difficulty that is gained ground. It was our religious systems, which put forward the idea of personal immortality by inventing the soul, the world beyond the grave and God, who is supposed to realize this process and everything else in the world. However, the illusion of religious personal immortality, in spite of predominating historically for a very long time, could not last forever; especially after overcoming the barrier of medieval dogma and the rapid development of science.<sup>15</sup> What does religion offer to a man? An unsatisfactory 'recipe' for personal immortality, an illusion, which can be harmful and reactionary in a definite extension, when carried too far, as history has shown. Maybe that is why they write: 'Personal immortality - that is one of the reactionary social illusions.<sup>16</sup> Yes, that is so, but we cannot accept the fact that this relates to the idea of personal immortality in its most general form, to man's desire as subject for unlimited and continual existence and development, a desire in which there is nothing reactionary. The above words can refer only to the religious variant of immortality.

The question arises - is there any other variant of personal immortality but the religious one? In materialistic dialectic, the following conceptions make sense: social immortality, historical immortality, biological immortality, etc., but here is a matter of personal immortality. Is the idea of personal immortality invested with a new meaning, and where - with a meaning different from the one which is put into it in religion? I will recall several works of the science fiction and prognostic genre: "Profiles of the Future" (Arthur Clarke), "I and Not I" (Gleb Anphilov), "The Father of Hart" (G. Maximovich), "The Second Expedition to the Planet Strange" (Vladimir Savchenko), "Gamble of Death" (K. Falkovski), "The Black Yasha" (Z. Yuriev) and others. A multitude of articles, which more or less treat the idea of personal immortality on the popular science level, can also be pointed out.<sup>17</sup> But V. Pekelis expresses himself in the briefest and most clear-cut manner when he writes: "In the distant perspective, at the end of the long road on which cybernetics has just embarked, we can imagine how an artificial brain manages to work with a natural, still sound one. For a certain time they will work parallel to each other and the artificial one learns all the habits and tastes of its host. After that the old living brain is switched off and the person goes on living with the artificial one, which has inherited the memory, the knowledge, the taste and the character of the person in whom there had been the living brain. The artificial brain will be incorporated in the body as a prosthetic organ. This would mean the man himself dies, and his body and even his brain dies! Yes, but the man remains alive as intellect, impairing his 'Ego' to the artificial brain.<sup>18</sup> In reality, in rough outlines, schematically, this is just the idea of personal immortality in its new variant, which can quite justifiably be called cybernetic, because it is born with the coming and development of cybernetics, in the context of the ideas of cybernetics. This variant is looked upon with distrust, as on not quite correct speculation by laymen with some of the vanguard scientific results. But there is what V. M. Glushkoff, one of the most eminent specialists in the field of cybernetics, said: "I think that man will be able to give much more to the machine. At some point in the last stage of feeding information into the computer, it seems as though man were merging his self-consciousness into the machine and, all at once, he begins to feel that he is himself and at the same time he is the machine. Such a possibility cannot be excluded if the center of self-consciousness is not inseparably linked with definite cells in the brain but can migrate... That is how it is - the final transition that is the transition into the computer not only of the intellectual power but also of the self-consciousness of man that is actually complete immortality."<sup>19</sup> Of course, the opinion and the intuition of a scholar or scientist, however much authority he may enjoy, are no proof of the value and truth of his ideas to be more carefully researched, not only on the level of scientific fiction and sensational commentaries that cause a stir in everyday life, but also on the level of profound scientific analyses, to begin with philosophical ones.

Perhaps first of all one should ask: Is it possible for the idea of personal immortality in its cybernetic variant to be successfully interpreted with the conceptions and notions of the contemporary science of Man? I think that this is a reasonable task at our contemporary level and I venture to put forward a definite possible solution to it, without excluding the existence of others.

The idea can be presented as the intersection of three sub-problems:

1. The problem of presenting man on an individual level, as a system capable of paving the way for the process of immortality.
2. The problem of the artificial organism - the successor.
3. The problem of how to realize the process of the migration of the self-consciousness, the consciousness, the memory, the subject of the biological into the artificial organism.

If we come up against something that is unsolvable in any one of these problems then it follows that his insolubility is valid for the whole idea. Besides this, it is necessary to demarcate two levels: the level of the possibility (or impossibility) in Principe, and the level of the 'technical executability', and it is obvious that the level of the possible-impossible relation will be of interest to us.

## **I. The problem of presenting man on an individual level, as a system capable of paving the way for the process of immortality.**

Our task is to see for that quality of men on the individual level, which would eventually make the process of immortality possible in the sense in question.

At once the ascertainment of the fact of the discrepancy between man as individual (organism) and man as subject, as a personality strikes us. This discrepancy has long been noted, and is made use of in theology as the foundation of the theologist's theory of the existence of soul. In Marxist literature, however, no account was taken of it for a long time,<sup>20</sup> but with the development of science, above all since the establishment of psychology as an independent science, this subject began to be, and is still being, investigated in detail in the works of those psychologists who have taken their stands in dialectic-materialistic positions.<sup>21</sup> In researches, which began somewhat later, and which are, strictly speaking, philosophical<sup>22</sup>, it is also reflected. All researchers agree that there is difference between man as a personality and man as an individual, but opinions of the Marxist authors alone on the character of this difference are, as M. Draganov<sup>23</sup> expresses it, like a whole 'winnowing fan' and differ very much from each other. For our analysis, however, it is not necessary to research the said 'winnowed fan', in spite of the fact that the question has direct bearing no a more concrete level of research.

The most obvious manifestation of the above-mentioned discrepancy is the presence of two lines of development in man on the individual level: the ontogenesis and the path of life. These two lines are relatively independent, i.e. within definite limits they take their course independently and within others they are greatly influenced and conditioned.<sup>24</sup>

The second circumstance, which takes shape in the pattern of the idea we are considering is the wide diffusion of the informational approach in researching Man, above all in researching his mentality, his consciousness and his personality. L. M. Vekker stresses very explicitly the fact that the theory of signals is an objective method of psychological research and a general strategy for building up the theory of psychical processes. He writes 'The categorical apparatus of the theory of signals not only comprises all the psychical processes examined above as a subject of psychology, but also contains the general groundwork of that approach to the problem concerning the objective method of psychological research, whose prerequisites are to be found in the positions of the signal functions of the psyche as given in the works of I. M. Sechenoff and I. P. Pavloff.<sup>25</sup> And, indeed, in the last few years we are witnesses of an avalanche of research in which the idea of the theory of information in application to the mind, consciousness and personality are developed multilaterally and successfully. The results of the informational approach to the memory<sup>26</sup>, emotions<sup>27</sup>, activation<sup>28</sup>, intuition<sup>29</sup>, the unconsciously psychical<sup>30</sup>, consciousness<sup>31</sup>, are indicative. But the fullest informational approach to these problems from the general methodological point of view is well motivated in the works of D. I. Dubrovskiy, more especially in the monograph 'Information, Consciousness, Brain32. Active work is being carried out to explain the ontological aspect of the psychical<sup>33</sup> as some form of neuro-brain movement, as a brain code of the psyche<sup>34</sup>.

The third important point, along this line of our idea, is that the personality represents unity, or entirety, or a system. (Here personality is understood as the whole of the psychic processes and manifestations inherent in the individual man.) That peculiarity of the personality is pointed out by A. N. Leontiev when he speaks about the few generally accepted positions in respect to the personality.<sup>35</sup> The task 'personality as a system' is being resolved with persistent work within the frameworks of different conceptions of systems,<sup>36</sup> but the difficulty of asserting an all-round acceptable theory of the systems hinders the progress in this field.

With the help of a more exact and more strictly conceptual language these three positions, important for the idea of personal immortality, can be united and presented as a single one, on a common basis. Two conceptions are suitable for our purpose: the General Theory of Functional Systems (P. K. Anohin) and The System Approach to Information (V. I. Kremyanskiy).<sup>37</sup> In many respects these two conceptions of systems supplement each other and, what is more important, make a reciprocal synthesis possible. If we make use of them we can formulate the following representation of man on the individual level as a system:

1. Man is a typically complex hierarchically organized functional system. The first question, which arises in respect to all functional systems, is the question of the system-forming factor. It is known that for all living systems in the process of evolution and system, the problem of existence plays the role of the system-forming factor.<sup>38</sup> This principle is also valid for man. In the scheme 'man-mankind', the problem of existence arises in the interrelations 'mankind-nature'. This interaction is different at different times in the course of history - humanity and nature are dynamic systems, mankind ever more successfully coping with nature, intensifying its activity. Thus the relationship 'concrete society - nature' arises in all historical times. The concrete human society, the definite social-economic formation, in its quality of a complex hierarchical functional system, decomposes the community's problem of existence in the form of a definitely accepted way of life - a way of life made up of the multitude of functions operating and bringing about a definite solution to the problem. A complex ramified graph is obtained and this shows symbolically the forms of the sub-systems of the community, built up, after all, of concrete human individuals. On the level of the individual the system-forming factor is again the problem of existence - already for the biological organism - but here there appears the system-formation factor of the metasystem - society, taken down, decomposed to the level of element which constructs it - in this case the individual. In other words, the system-formation factor in man on the individual level has certain complications: there are two aspects to the problem of existence - its own, bound up with the relationship 'individual - nature' and the metasystem one which arises out of the relationship 'man-human society'. The action of a definite system-forming factor leads to the rise of a system such, as is that in man on the individual level.
2. As is the case with all living systems, here, too, the systematic is of two types - corporeal-material and informational. The corporeal-material is represented by the sub system - the biological organism - but the informational is represented by several systems of information with a common bearer - the human organism. Here again the system-forming factor - the problem of existence - decomposes into a multitude of functions, realizing the existence of the organism as a complex hierarchical functioning system, built up out of elements on the level of the molecule. It is possible to trace in rough outline the following levels of organization in the human organism: the molecular, the organic, cell, tissue, organ, and organism.  
The systems of information (the infs) are of three types: the inf of genetic information, the inf of behavior organism self-regulation, and the inf of consciousness (or of personal information).  
The best inf-bearer relationship as the role and the meaning, the forming and dynamics of the infs, can be understood in the context of the historical researches.
3. Man is a sui generis peak of evolutionary development at which it is repudiated and a new type of development, the social one, is affirmed. The human individual bears within him in a peculiar way the whole of that long road leading to perfection, because system formation in nature knows no way except that of the steady consecutive build up.

The inf of genetic information came into being for the first time as life itself came into being, i.e. with the appearance of the first living systems<sup>39</sup>. Later sensibility and the psychical came into being too. The chief thing, what, indeed, was decisive for the emergence of sensibility, was the condition for the transition of life from a homogeneous environment to life in a complex environment of discrete objects, the transition from unformed to truly formed sources of life<sup>40</sup>. It was with this transition that the next inf came into being - the inf of behaviorist organism level self-regulation. The consecutive jump in the development followed - the appearance of man, i.e. the social being endowed with consciousness. Then there came into being the third inf - the inf of consciousness, or of personality as informational system.

The general principle of the theory of the infs is their metasystem character, their metasystem purposefulness<sup>41</sup>. Obviously, the metasystem purposefulness of the inf, genetic information is linked with the possibility of the individual being included in the system of the biological species. The metasystem purposefulness of the inf of organism level self-regulation reflects the interaction of the organism with a definite natural environment: physical conditions, contact with other forms of life, contact with its own species, etc. The metasystem determining the inf of personality is society, the social milieu. We can conclude that in reality the infs reflect the system-forming factor in a definite setting. In this way the inf of personality information reflects, to one or another degree, the problem of existence bound up with society, while the other infs - the genetic inf and the self-regulation inf - reflect the problem of existence which the organism has to face. This explains the inversion, which is more pronounced with man than with animals. With animals the supreme purpose is the existence of the organism, this purpose serves simultaneously for the system and the metasystem. Here the psychical inf has not the status of independent existence and development, it serves the organism and that is all. In man, however, the inf of personality, which arises on the basis of the psychical qualities of man, has another metasystem orientation in respect to the problem of existence faced by the society and acquires the status of independent existence and development. The system formation, which comes from society, cannot be realized on the level of the individual in any way but as a system of information since the corporeal-material system (the organism) is a sphere of other system formations. As the problem of existence for society is of paramount importance, it follows that in man the inf of personality serves the organism, and conversely, the organism serves the inf of personality, i.e. it pays a subordinate role.

If we consider the historical order in which the infs came into being, we immediately notice two peculiarities. The first - the infs are qualitatively sui generis, and second - in their later forms the infs become 'more free' from their bearers.<sup>42</sup> Kremyanskiy writes: 'The genes' are not able to act except through the channels of the 'corporeal link', and this means transport of matter. (R. Gerard makes a difference between 'transport' links and 'transmitting' links, the latter transmitting influences, especially signals, i.e. they do not produce so much physical changes, but give some definite information.)<sup>43</sup>

In this scheme the question of the manner of coding the different infs acquire particular actuality. Each material bearer - the cell, the nerve system, the brain, etc. - 'generates' a certain amount of space in which it can exist, organize itself and develop some kind of inf. Obviously the property of the bearer to 'generate' space with greater possibilities will be of essential significance for the self-organization and development of the inf.

The concrete 'inf-bearer' relationship will be what determines the answer to the question: Can the inf change its bearer?

And so, now being armed with these notions, we can again ask the question: Is man on the individual level, as a system, endowed with the property of laying the foundations for the process of personal immortality? Now this question can be transformed and put as follows: In principle can the inf of personality change its bearer? The answer to this question cannot be categorically on the level of concrete knowledge, with what we have at our disposal at present. Bearing in mind the before-said peculiarities of the infs and the general thesis that one and the same kind of information can exist in different physical bearers, we can assume that the inf of the personality can most likely change its bearer provided that the new bearer 'generates' an isomorphic space for existence, self-organization and development. In any case such a hypothesis cannot be rejected on the basis of general principles and notions because it does not contradict them. But even if one discovers some contradiction, the hypothesis can be rejected or confirmed only on the basis of concrete researches.

## II. The problem of the artificial organism - the successor.

The task of creating artificial life, or an artificial reasoning being, or an artificial organism has been discussed many times on the most general level and sometimes the arguments have been of a very heated nature.<sup>45</sup> Today this problematic have fallen into the background, in spite of the fact that from time to time it is again called to mind.<sup>46</sup> It has, however, now yielded pride of place to concrete research work in this field.

What we can add here in connection with this problem is its specific refraction through the idea of personal immortality, its natural concretization, and much greater definitiveness than in its most general form. The formulation can be the following: the creation of a corporeal-material system bearer, 'generating' the space of existence, self-organization and development for the personality inf, a space which should be at least isomorphic with the space that the biological human organism can afford, or it should become 'enlarged', i.e. should have greater possibilities.

In this formulation the task does away with a big group of contra-arguments in respect to the hypothesis and to its positive solution. Hardly anyone will deny the conformity of the hypothesis to the requirements for the possibility of creating a system which in its quality is equal or superior to the human organism and, in the first place, is linked with remembering information, with processing it, and with self-organization.

And at this point we can quite justifiably envisage such a hypothesis, whose acceptance or rejection must be based on concrete researches.

### **III. The problem of how to realize the process of the migration of the self-consciousness, the consciousness, the memory, the subject of the biological into the artificial organism.**

The solution to the third of the formulated problems is at the beginning the most indefinite, as there is no concrete information about the manner of coding and self-organization of the personality inf in the biological organism of man and also none about the organization of the artificial bearer (organism-successor, brain-successor). It can, however, be shown that this is not a senseless task. The process of an inf's migration from one bearer to another is to be possible in certain concrete cases, but whether that will prove to be possible in the case of the personality inf, we shall be able to understand only after concrete researches have been carried out.

The following illustrates the process of the inf's migration. D. Gabor created holography in 1948, but it was twenty years before it was realized that holography is not simply improved photography, but a powerful method of memorizing and processing information, a method resting on the diffraction and the interference of waves of an unspecified nature, carrying information. In connection with applying this method in informational techniques, there have sprung up different techno-scientific lines of research work<sup>47</sup>, which are developing rapidly and in a revolutionary way, and there are being worked out holographic memorizing devices and computer machines. Let us take, for example, some kind of abstract system based on this principle, i.e. a system-bearer, realizing the process of holographic memorization and interaction between the holograms, and the inf, which exists on the basis of the great mass of holograms and their interaction. We know that in the holograms the information is coded in a diffused manner in the form of a quasi-chance interference picture. Each sufficiently large section of the hologram contains the whole information memorized in the hologram. This is to say that if a hologram is divided into two parts. It does not mean that it is destroyed, but that it is duplicated. Consequently the physical division of the mass of holograms also means the duplication of this mass. If we assume that in dividing the mass we shall be able to preserve the dynamics of the interaction between the holograms, something, which in principle does not present any difficulty, the result will be that we obtain two absolutely identical infs.

This process can be presented in a different way. Let us connect the system 'bearer 1 - inf' to the system 'bearer 2', observing, however, two conditions: bearer 1 and bearer 2 must be two examples of one and the same species and the link must be such as to make it possible for the process of memorization and processing of information, i.e. the wave interference process and its fixation to stretch out both over bearer 1 and over bearer 2. Under these conditions if whole system functions long enough, i.e. long enough for the information from the first bearer to be re-recorded on the second on the basis of the distributed memorization, the inf will begin to exist on the system 'bearer 1 + bearer 2'. What will happen if we break the link between the bearers and destroy bearer 1 i.e. the initial bearer? Obviously we shall not destroy the inf, which has accomplished a migration, without inverted commas, from bearer 1 to bearer 2.

I wish to stress the fact that this schema is only an illustration of a process of inf migration and it is not of a proven nature. There are good reasons to pay attention to the holographic hypothesis in respect to memory in man<sup>48</sup> developed by some authors, a hypothesis which was well received in one form or another by neurophysiologists, and which provides the best explanation so far found for a number of phenomena.

In this way the assumption that it is possible to have a process of migration of the personality inf from the biological organism to the artificial one has proved quite justifiable on the level of the hypothesis.

In conclusion, on the basis of the analysis carried out, the inference can be drawn that the idea of personal immortality in its cybernetic variant has the right to exist on the level of plausible scientific hypotheses. It will stimulate scientific research in certain fields and will make it possible to consider some well-known positions from a different angle and it will have within it a heuristic charge. Considered as a hypothesis, the idea of personal immortality should be affirmed or rejected only in the basis of concrete research.

In this way the personal immortality of man becomes feasible as a process of unlimited existence and development of the system of information, identifying itself with consciousness, self-consciousness, personality, in a series of corporeal-material bearers with ever growing possibilities.

But that is something already known - does not the inf of genetic information realize just such a development in a series of bearers, in individuals of one and the same species, in the transition from generation to generation? Making use of his vast possibilities man will, perhaps, succeed in doing the same with the personality inf. But if this does happen, it will mean a process of stupendous change, a leap that can be compared only with others: the origination of life and the appearance of man.

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