

MODERN GENETICS AND PSI PHENOMENA

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Ever since the eighteenth century a conflict has been going on between what was then considered the queen of the sciences, theology—the tenets of the Christian faith—on the one side, and, on the other, the dissenting conceptions that the advancing sciences were developing concerning man and his place in nature. In essence this conflict arrayed the religious view of life, that man consisted of a material body and an immaterial soul of divine origin, against what may be termed the materialistic point of view, namely, that man was wholly and solely a material, physical object, with nothing to survive bodily death and nothing to link him with divine powers.

Toward the end of the second half of the eighteenth century, the phenomena of so-called animal magnetism and artificially evoked somnambulism seemed to swing the pendulum away from materialism, for these phenomena, mainly of an extrasensory perception nature, were believed to indicate the presence in man of a superhuman entity, a nonphysical soul or spirit to which the phenomena were attributable. For several decades, these phenomena, later to be termed paranormal, influenced the philosophical view of life and stimulated the rise of Romanticism. All through the greater part of the nineteenth century the same conflict raged between the crumbling authority of the Bible and theology and the bold materialistic conclusions the natural sciences were developing (Lyell, Darwin, Huxley, and others). In more than one sense the rapid spreading of spiritualism throughout the world could be seen as an attempt to combat materialism with its own weapons, that of proof by experiment, and so establish once and for all the reality of an immortal human soul.

In England some scholarly and educated groups, brought up in the traditional beliefs of the Christian faith, yearned to challenge materialism with its own weapons and defeat it, so that society could return in full peace of mind to the certainties of the independence of mind and body, of the reality of a living God and the immortality of the soul. This is well illustrated by one of F. W. H. Myers's remarks: "In about

1873—at the crest, as one may say, of perhaps the highest wave of materialism which has ever swept over these shores—it became the conviction of a small group of Cambridge friends that the deep questions thus at issue must be fought out more thoroughly than the champions either of religion or of materialism had yet suggested. . . .” Myers believed that knowledge should be attained simply by experiment and observation.

Then Barrett came forward with his telepathic results (1876). Since these could not be fitted into the then known framework of scientific and philosophical conceptions, Myers and his collaborators advanced the idea that telepathy proved the independence of the human mind, since mind could communicate with mind thereby bypassing the sensory channels. Thus telepathy, being of mind-stuff, had to be a non-physical agency. With regard to the latter it may be argued that the nonphysical explanation of telepathy was really based on a still imperfect knowledge of man and nature.

The same drawing of conclusions while our knowledge was still in a very imperfect state can be seen in the case of Hans Driesch's vitalistic theory of life, advanced at the turn of the century. As a biologist, Driesch experimented with the ova of sea urchins. He discovered that when such an ovum was cut in two the two separate pieces developed to form two complete individuals, instead of remaining incomplete as demanded by the then current mechanistic-materialistic conception of life. The urge toward completeness, completing the ingrained form, this striving to obtain *Ganzheit*, the German word Driesch uses, could only be conceived, so Driesch argued, by postulating a soul-like, organizing factor of a nonmaterial nature that he named *entelechy*.

Driesch was greatly interested in parapsychology, probably because, in his opinion, psi phenomena firmly supported his entelechy principle. ESP, PK and materialization, he believed, could only be conceived of as the result of soul-like, nonphysical forces. They were strong indications in favor of a human psyche, a nonmaterial entity organizing and directing all vital processes and manifestations. However, practically the whole of Driesch's vitalistic view of life, which he believed he had proved up to the hilt, is now completely superseded. There is little doubt that if Driesch had lived and worked in the present era of molecular biology it would never have entered his mind to come forward with a vitalistic theory of life. As was the case with Driesch's vitalistic conception, I am afraid that modern science, and parapsychology itself, are strongly undermining the viewpoint that psi phenomena are indisputably serious indications of man's dualism, of the independence of his body and his mind. In his Presidential Address to the Society

for Psychical Research in 1926, Driesch stated that the mechanistic theory of life is unable to account for the facts of embryology, heredity and organic movement. Practically every modern biologist will consider this statement untenable, only twenty years after his death.

It is during the last two decades alone that our insight into the processes directing heredity has become so profound that we are now able to state with a high degree of probability that any trait, faculty or aptitude shown to be transmitted via the genes possesses a physical basis, i.e., that it is dependent on the arrangement of the nucleotides on the large deoxyribonucleic acid (DNA) molecules in the nuclei of our cells. It is this arrangement of nucleotides that provides the blueprints for every possible corporeal and mental characteristic in man, animal and plant. In fact there is no real difference between the genetic code, the genetic blueprints, the hereditary programming of man's whole bodily and mental build-up, and those functioning in a virus.

At the moment it may be assumed as a fact that if any characteristic, even one generally considered to be of a purely psychical, mental nature, can be shown to be genetically based, to "run in families," then that trait, faculty, or aptitude, is rooted in a purely material, physical soil, and consequently must itself also be of a purely material nature, just as material as any chemical process.

It has been known for quite a long time that certain characteristics of a purely mental, intellectual or artistic nature do run in families, and are thus genetically based. We need only point to the Mozart family, the Haydns, the Bachs, the Strausses, for their musical talents; the Bernoullis, eight of whom in the eighteenth century were prominent mathematicians; and the English Huxleys in this and the last century. These are instances of great intellectual and creative powers being passed on in a family. Certain individual behavior patterns are apparently fixed beforehand in the DNA build-up. This even applies to criminal tendencies. Darlington, one of our most prominent geneticists, makes this statement: "The insane felon, if left at large, is at least as likely to repeat his felony as the sane felon. *Neither* has any choice in the matter. For the old lag, the recidivist, vengeance does not deter, compassion does not reform." He further remarks: ". . . in all respects our reactions with any given set of outside events are decided before they occur. Individuality rests, not as John Locke and Bateson imagined, on immaterial substance, but on the genetic substance in the fertilized egg."

Incidentally, Darlington's last remark is of importance with regard to the mind-body conception and the possibility of the human personality surviving bodily death. For, if the individuality is based on the

genetic substance in the fertilized egg, it has to be considered the result of physical processes, so that its chances of survival will be as remote as those of our eye and hair color and the length of our noses.

To date no profound investigations have been conducted on the genetics of psi talents. The research in this direction cannot be compared with that on various bodily and mental characteristics carried out in the course of the last half-century. The reason is, undoubtedly, that the reality of psi phenomena has only been accepted in some scientific circles during the past few years and that only warily. But there is a growing amount of evidence that the psi faculty does run in families, as Gardner Murphy remarks in one of his books: ". . . there exist likewise a considerable number of cases in which a broad psi predisposition seems to run in families, of which an outstanding illustration is the case of Mrs. and Miss Verrall. . . ." The hereditary aspect is quite apparent too in the case of Stephan Ossowiecki who traces the gift to his mother's family and whose brother also possessed such an ability. The mother-daughter combination, both having the same kind of ESP impressions, can be noted in the case of Kate Christie.

The French psychical researcher Dr. Gustave Geley expresses himself quite clearly on the subject: "In all cases of the great mediums I have studied right up to the present (1922), and among these there were ESP subjects as well as those specializing in PK phenomena, I came across heredity. The heredity could be in direct line, or could be traced to ancestors or collaterals."

Mrs. Ena Twigg tells us that her mother was "very mediumistic," and that further all her family, on both sides, were mediumistic. She, however, was the only one to develop mediumship professionally. Mrs. Eva Hellström, former Honorary Secretary of the Swedish Society for Psychical Research, told me that her grandmother on her father's side was psychic, just as she herself was. Referring to a Swedish ESP subject, Mrs. Agnes Röklander, she wrote to me to say that this lady's mother and grandmother were paranormally gifted. This was also the case with her own daughter and granddaughter, though in a lesser degree.

Without any difficulty I could go on quoting various other cases of psi being hereditary, but I feel that enough has been brought forward to support the claim that psi does run in families. Aside from this bare fact, we know practically nothing at the moment about the genetic factors involved, whether psi heredity simply follows Mendel's laws or whether a far more complicated pattern is at the base of it.

In the last decade parapsychological research itself seems to supply indications of psi's physical nature. Osiris's long distance experiments gave slight indications that distance does influence the intensity of the

psi effect, pointing to its physical nature. The evidence of this point, however, is still of a very weak nature and we shall have to wait many further results before coming up to any definite conclusion.

Stronger indications come from animal psi, i.e., experiments indicating that animals possess psi faculties. The conception of the independence of the human mind is gravely jeopardized by the significant results recently obtained in ESP and PK experiments with various animal species as subjects. During several centuries an independent mind, a soul, was attributed only to man. Animals were considered not to possess a soul or spirit, and so for them no survival after death was possible. Morris, reviewing the case of psi in animals, though stressing the point that many more experiments will have to be conducted before definite conclusions can be advanced, remarks that the proving of animal psi may well be important to mind-body dualistic theories, for if psi occurs in man *and* in animals, this could mean that psi is inherent in living things and probably linked with DNA processes. And the latter really means that psi possesses a physical basis.

When Driesch's vitalistic views of life were accepted by many biologists, animal psi could still be linked with a psychical, a spiritual background, organizing and directing all life's processes. Driesch's entelechy theory, however, is now as dead as the dodo!

The nature of psi could be decided upon, one way or another, if enough evidence could be brought forward to give us a sound idea of how life developed here on earth about three billion years ago. The evidence we do possess at the moment has brought about a consensus among geologists, biologists and various other scientists to the effect that the physical, chemical and meteorological conditions on the then still very youthful earth made possible the spontaneous generation of chemical substances vital to life, such as amino acids and primitive proteins, and that these chemical compounds at a certain stage became self-regulating, giving rise in the course of aeons to that wide-spreading tree of life as it presents itself to us today.

Of course, what has been discovered in the course of the last fifteen years with reference to the origin of life is to be regarded as comprising only a few single parts of the extensive jigsaw puzzle life presents us with. However, indications bearing on the problem are being collected in greater and greater numbers every year, and the time is perhaps already in sight when a sound basis can be constructed to bear the weight of proof in this matter.

Parapsychology, once the staunchest, and probably the only defense line left backing up human dualism, is now on the retreat, leaving more and more terrain to the physical basis of life.

DISCUSSION

Rogo: I hold a very different view from what Mr. Zorab has presented and there are devastating arguments against what Mr. Zorab has presented this morning. I think the problem goes back again to heredity versus environment. Mr. Zorab has talked about musical prodigies and the fact that musical talent, especially in composition, does go down family lines. I really do not think that any person who has studied the psychology of music would seriously contend that this is a genetic factor. It is generally considered that these children, especially in the case of Bach and Mozart, were merely, as children, exposed extensively to music and to the fundamentals of composition which developed later in life. This is generally accepted. I think the same applies to mediums and gifted subjects. Certainly there does seem to be a family line. However, if this were genetic, I think you would find that the most prolific line would be the psychic ability in a mother and daughter or a father and son, while in fact you find that the most common evidence is between siblings where two of the children will show ability, such as the Schneider brothers, the Dignie brothers. You can go down a whole list of others. This, I think, tells more for environment than heredity. Certainly, mediums claim that there is a family tradition, but again this is completely hearsay. Finally, if you go over the history of mediums, most of them say that they developed their mediumship after sittings with other mediums. Klusky developed his mediumship after sitting with Guzik; L. Cooper claims she developed a mediumship after sitting with Leonard, and so on. Finally, if we accept that psi is basically genetic, I think we would also have to accept that psi is a physicalistic phenomenon. I think there are devastating criticisms against that.

ZORAB: Mr. Rogo, when I say that musical talents are genetically based, I am just following the opinion of the geneticists. I have not made such a study of music. But do not forget that you cannot separate the one from the other. As Francis Galton said, the whole thing is governed by nature and nurture. In other words, the talent can be there in an inconvenient environment where it will not come out. The stimulating environment has to be there, otherwise that talent which is already there cannot develop itself. You can have an Eskimo who has a very great swimming talent, but if he is sitting in his igloo and never goes into the water, he cannot practice. We have some young swimming prodigies, here in Holland, at the moment. It is true, the mother was already a swimming champion and gave lessons, and she insisted upon her children breaking records, so she started training them from

their tenth year. This girl, Bunschoten, had to be six to eight hours in the water each day. If there is talent, it will go to great heights. But if there is no talent, she will not be able to break records. A musical talent is not only a musical tendency. The environment has to bring it out, has to feed it. If I may say so, Mr. Rogo, you are clinging to a safety line. Your argument is clinging to a safety line to get out of this—for you—not interesting problem. As far as I have read genetics, seeing the enormously long list of tendencies and illnesses, complaints and aberrations, I conclude that we are all genetically based. For instance, if one eats red beets and gets red colored urine, that is genetically based, because there are people who do not get this red color in the urine. There are people who smell things that other people cannot. This is not only a question of environment, it is really a genetically based tendency.

BELOFF: Dr. Zorab has done something in his talk which I have always taken to be a failing of young men, and I was therefore rather surprised to find it in an older man. Namely, he has made the mistake of taking a current trend, a current fashion in science for, as it were, the last word, the verdict of science as such. Now, it is perfectly true that with the rise of molecular biology, the materialistic explanation of biological phenomena has been reinforced. But, surely, we have to be a little bit more circumspect about pronouncing an epitaph either on vitalism or dualism or any of those other ideas which have a way, in the history of science, of coming back in a new form.

What I really want to challenge here is the logical basis of the argument that, if something has a genetic determinant, therefore, it must of necessity have a physical basis. I challenge this because, obviously, any dualist, even if he is a very naive sort of dualist, will know perfectly well that mental processes have got to have a physical basis. This much is always conceded. I need a brain in order to think. My brain is not just there for decoration. The point is: the structure of my brain, my eye color and so on will have a genetic basis. I knew this before Jacques Monod started writing. Before you can say that a psi process has a physical basis, you have got to be able to explain it in physical terms, otherwise the most you have established is that the physical precondition for it to operate has a genetic determinant. That is not the same as saying that the process as such, either consciousness or mental processes or, still more, psi processes are necessarily of a physical nature. You are claiming too much.

ZORAB: How do we find that out? In the last few years, several papers have appeared showing that intelligence and IQ are all genetically based. I do not know if you read some papers of McConnell's where

he cites several papers on statistical investigations of the appearance of intelligence. Of course, I know that brain and intelligence are perhaps the outcome of a certain basis, but that brain which operates in an intellectual way has a certain formation. Some people who are highly intelligent very often have a great memory which helps in reproducing everything they have once read. Enormous memories able to reproduce easily everything once learned and seen, that is a condition of the brain. Why should we go further? I can just as well argue that intelligence and mental processes are just a sort of outcome, as the old materialistic theories said: the brain exudes thoughts just as the kidneys exude urine. It is a question of choice. To tell you the truth, I have been very impressed by the new developments in biology, but I also approach this subject from a survival point of view.

POYNTON: I would like to go back to the remarks of Beloff. I certainly do endorse these. I think that, obviously, one has to expect a physical basis for the phenomena. It would be astonishing if there were no physical basis. I would like to find out this physical basis and clearly understand it. I think the danger is that we are inclined to become so engrossed in the complexities of the physical basis that we think that is all there is to it. I made it a point in my last paper to analyze some statements by a very great biologist who had summarized a point of view that Zorab had given himself, to show that there is in actual fact no basis for believing that this is all there is to it. It is such a marvelous story, we are inclined to say, "Wow! Here is the whole picture." But if you look closely at it, this is not the picture at all. Not the whole picture. Obviously, it is a part of the picture, it must be part of the picture.

ZORAB: Mr. Poynton, you are quite right. You must not forget that I have to go on the opinion of specialists. I am just a layman who wants to drink at the source of science. Before I am settled down in the grave, I may have changed my mind five times. This is only today's impression.

NOVILLO: Mr. Zorab, one of your results was the reality, the relevance, of psi in animals. I think it is no proof of evidence of psi in animals. In all our studies, whenever we are making serious studies of psi in animals, we can find a sole parallelism between what we call psi in animals and psychological situation in the experimental. Then the result, what we call psi in animals, is not from animals, it is experimental. I think we cannot exclude the influence of the experimental effect. I think this is no reason to say that psi is material. That we can explain it in materialistic terms because we can find psi in animals

is no proof, because there is no evidence of the reality of psi in animals.

ZORAB: So it is an experimental effect.

NOVILLO: Absolutely. It is proving strong differences between psi in humans and in animals—what looks like psi in animals. When the experimenter is very enthusiastic, he obtains very good results. When we are in a group experimenting, the results go down. Sometimes, when the people dislike the animals, the result is negative.

ZORAB: I accept your word. This, of course, changes the whole face of our experiments. If Monod has built up the model of fabrication of proteins, do you mean to say that the RNA which comes from the DNA and settles down on the ribosome and sends out an RNA messenger, that the RNA messenger functions as transport. Monod thinks that the cells are going to work out in exactly the same way owing to this influence. I am sure that our experiments with ants are too short to come to any conclusions. I only quoted Morrison. Maybe next year you will see quite different results in your experiments.

CAHN: I have had a feeling all through this conference and in fact all through my acquaintance with parapsychology, that we are not beating a dead horse, but we are beating a horse that has not been born yet. By that I mean my problem. I know that historically this is in part what the early history of parapsychology is about. It is a sort of covert attempt to bring God or supernaturalism, or something of that sort, back in. What I feel very strongly is that what we should be looking at, not as answers but something much closer to questions, are the phenomena, attempting to consider possible ways of examining them, such as some that I suggested in my paper, that is, by looking not just at the world as we can see it in our present state of consciousness, but possibly also as people might see the world in other states of consciousness, without necessarily trying to come to a conclusion one way or the other about a so-called mind-body connection. It seems to me that our business is, in this sense, highly empirical.

SERVADIO: I think this is a new version of a very old quarrel and that this quarrel is far from being over. After Monod, four scientists of great repute wrote four books to disprove what Monod had said. I think it is much better to do what my friend Zorab said, just wait and see. As Dr. Beloff pointed out, George Zorab has a certain tendency to enthusiasm and to making sweeping statements. I'll give you two examples: "Animal magnetism phenomena are mainly of an ESP nature"—of course, if he read this sentence in somebody else's article, he would say, "No, no, they were certainly not mainly of an ESP nature." At another point, he said: "Enough has been brought forward

to support the claim that psi does run in families." Does it really? I think we are very far from having established this. My conclusion is, let us take it easy.

BRIER: Most people have been arguing that you cannot go from the fact that there might be a genetic factor involved to the fact that it is a purely materialistic effect. I think this is true, but I think it works the other way also. Ever since I got into parapsychology, which is not very long of course, people have always been arguing: Look at ESP, it is nonphysical; this shows that there is a nonphysical aspect to man. This argument does not work either. People come forth and say: Look at ESP, therefore, man has a mind. But whenever someone does a good animal experiment, like Chauvin's mice experiment, nobody says: Look, mice have souls. If the argument worked, it would work for animals too. It is quite possible that ESP has no more import to the existence of mind than any other mental activity.

ALBERTI: I agree with Dr. Cahn and with Dr. Brier also. I think it is a little too restricting to reduce parapsychology as a science to the science, or pseudo-science, of the problem of mind and body. I think we should not be so bothered with only or specially the mind-body problem, which should be worked out on a philosophical basis, but not necessarily on an experimental basis.

CAHN: If we look at the whole parapsychological field, even admitting there are alleged psi phenomena, from the point of view of the Soviets you have another way of looking at it, purely, not necessarily materialistically, but purely physicalistically. Now maybe materialistically too: That all psi interactions are interactions of bioplasm, which is supposedly or allegedly a fourth state of matter. I think of Dr. Brier over here who has been talking about instrumentation for force field effects and things of that sort—instrumentation of measuring. What about a psychical force that allegedly moves objects? Maybe we could actually measure some kind of a force field effect. If we do, have we disproved mentalism, taken in the naive sense that Zorab mentioned. As I say, I do not think that the horse is dead, I do not think the horse has been born yet.

TARG: I would like to ask a question that maybe somebody can answer after the next paper. Most people here are more skilled in linguistic analysis than I am, but I really am troubled, as this meeting goes along, by this continuing problem of nonphysical causes. And I am not sure, first of all, what a nonphysical cause is. I would like somebody like Dr. Flew or Dr. Cahn or somebody else who is an expert in linguistics to help me in how to go about finding out the nature of a

nonphysical cause and knowing one if I had one. It is not clear that it is even a fruitful coupling of words: a nonphysical cause, a nonphysical base. I am not sure what you do with those words to learn something about what we are supposed to be investigating.