

## Comment

# The communication strategies of neocreationism between the United States and Europe

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In their essay which appeared in 1972 in *Models in Paleobiology*, Stephen Jay Gould and Niles Eldredge, introducing the theory of punctuated equilibrium, stressed the fact that no scientific theory develops as a simple and logical extension of facts and of patiently recorded observations, and that the particular vision of the world that the scientist adheres to is able to influence, even unconsciously, the way in which data are collected, selected and then interpreted. Scientists, being aware of the existence of an intrinsic problem of prejudice in their scientific research activity, know that, in order to produce original and innovative ideas, it is fundamental to try to revolutionise their research image, to look at reality in a new light, to read data with alternative viewpoints.

According to the American philosopher Robert Pennock<sup>1,2</sup>, creationists ignore this aspect completely: they look to the Sacred Scriptures to find answers on the origin of the world and of life, and then try to interpret the empirical evidence so that it fits the scriptures.

However, American creationism has changed radically in recent decades. Unlike creationists in the strict sense of the word, who use what is said in the Bible explicitly, at times even literally, to attack the theory of evolution, the advocates of Intelligent Design, who opened their season in the Seventies with the publication of *Scientific Creationism* by Henry Morris<sup>3</sup>, do not adopt a stance of direct opposition to evolutionism, but try to work alongside it and to make use of scientific method to find the evidence of the divine hand in nature. This approach has made them theologically less strong than their predecessors, but it has allowed the theory to find space in scholastic and academic environments. This new form of creationism resorts less to the philosophical-scientific tradition of Bacon to confute the theory of evolution (therefore avoiding emphasising the empirical aspect of science and accusing evolutionism of not being a science because it has few truths to support it), and began to turn to the more up-to-date Karl Popper and Thomas Kuhn. Stressing how science is an arena in which alternative research traditions continuously confront and compete with one another, neocreationists present Intelligent Design as a model competing with Darwinism, equally valid and equally scientific.

Promoting a teaching model which they sum up in the motto “*teach more science*”, they aim to depict themselves as the promoters of a pluralistic and modern way of doing and teaching science, which fights against the rigidity and dogmatism of orthodox science.

They have also learned a few lessons from the failures of their predecessors and have “evolved” more sophisticated strategies for competing with evolutionists: above all, they have learned what topics must be accurately avoided. First of all, in debates with scientists they avoid explicitly mentioning Genesis and being clear about their positions concerning man’s evolution; they are vague in defining the nature of creation, and refrain from indicating the Flood as an explanation of the particular geology of the Earth, or from dating its origin. They declare that they accept the idea of common descent, but they constantly emphasise the fact that life is the result of an intelligent manipulation of matter, of the intentional design of an architect, a planner.

The American advocates of ID define their way of defeating evolution as “The Wedge Strategy”. The metaphor is particularly effective, as it exemplifies their specific way of trying to achieve the objective: to unhinge evolution entirely by inserting wedges into the small cracks in its theory. The strategy is applied aggressively and systematically by the leaders of the Center for Science and Culture (CSC) of the Discovery Institute. Financed and supported by Christian fundamentalists who hope that the weakening of science can be of use, not only for the reintroduction of creationism in schools, but also for a radical cultural and political change of American society, the Institute cultivates alliances with the

mass media, newspapers and magazines with conservative tendencies, radio and television stations. But above all, it tries to find its way into public schools and Universities: according to a study, the results of which were also published in an issue of *Nature*<sup>4</sup> in April last year, more than three quarters of young Americans, before entering university, believe that God played some role in the origin of man, and 30% declare that the theory of evolution is only one hypothesis among many, not sufficiently backed up by empirical proof. Many students, especially those enrolled in science faculties, seem to find Intelligent Design a reassuring way of reconciling science and faith. Thanks to the ever more numerous meetings organised in the Universities and to the attempts to have changes made to the science curricula in public schools (besides Kansas, also Ohio, Texas, Missouri, South Carolina, Wisconsin and Mississippi have been the sites of fierce political battles and of court appeals to have Darwinism excluded from school programmes or to allow the teaching of Intelligent Design during the science classes), scientific creationism, even though it does not in any way satisfy the criteria to rise to the rank of a science, can no longer be ignored and has made its way among the themes for debate in science.

The strategy adopted by American creationists is fairly standardised: they make an effort to pinpoint problematic nodes in the theory, nearly always using elements of the internal debate of evolutionary biology; the next step is to establish that these cannot be scientifically explained, and to conclude that we need God to account for them, stressing the fact that, in the end, the theological explanation is the most realistic one we are able to obtain.

They draw up long lists of “questions to ask evolutionists”, some of which are very old, recalling the objections that natural theologians made to Darwin, and many borrowed from astrophysical disciplines and cosmology.

These questions, asked to biologists during debates in a simple and easily recognisable way and with a synthetic “effective” language, normally require very long and complex answers, difficult to translate into accessible language, free from technicalities, without losing scientific exactness. These answers require a very wide and interdisciplinary scientific background. Many of the questions debated are still the subject of intense study and research today, and do not contemplate definitive explanations, and certainly not pre-packed and standardised ones. The debate schedules almost never allow the scientists to present an exhaustive reply (often a whole university course is not sufficient to deal with such far-ranging themes); this means that the audience, composed largely of people who are not experts in the field, and with a very heterogeneous level of education, is left with the impression that science is unable to supply convincing replies: instead the simple and specific questions raised by the creationists remain firmly impressed in their memory. In short, scientists are forced into the corner of having to defend science against accusation and are confined in a position of apparent weakness.

Another strong point of the creationists’ strategy is to exploit the confusion between that which cannot be explained and that which is not (implying *not yet*) explained. Some concepts may indeed be deemed unexplainable: they represent an insuperable challenge for science and stray into the field of metaphysics (with questions such as “why does the universe exist and not an absolute void?”). Faced with such questions, scientists usually take up an agnostic position. Other questions, which may not have answers at empirical level, can instead be explained at least in principle. Again, some arguments which subtend a theory may easily be left unexplained without this causing the collapse of the complex architecture of the theory itself.

The biochemist Michael Behe, one of the most relentless advocates of Intelligent Design, is particularly skilled in making it appear that some challenges of science, which cannot be included in the category of unexplained things, are insuperable. Behe is renowned for having introduced a new element in the old dispute, according to which it is difficult for Darwinism to account for the complexity of biological structures by indicating natural selection as the principal cause of evolution: he claims that molecular systems present a property, irreducible complexity, which cannot be explained by contemplating only the action of Darwinian mechanisms. It is defined as a single system composed of several interacting parts, each one of which contributes with a specific task to the function of the whole, and the removal of which causes the system to cease functioning. Among the numerous examples collected in *Darwin’s Black Box*, Behe<sup>5</sup> mentions the cascade of molecules and factors involved in vision, vesicular transport, the movement of cilia and flagella, on the evolutionary origin and function of which, in his opinion, “orthodox” scientific literature has opted for a suspicious silence. The inability to explain how a mechanism that assembles structures a little at a time, through numerous slight modifications, can

achieve such articulated systems, leaves room for the “obvious” explanation according to which irreducibly complex systems cannot but have been produced following a plan, and that the designer must have known the result of the process a priori; these systems are therefore the fruit of the plan of an intelligent activity. This is a rehash of the teleological proof of the existence of God, updated with modern science and played in a biomolecular key.

Behe has illustrated his idea of irreducible complexity with his typical clear language and captivating rhetoric, using a simple example, that of the mousetrap: in order to perform the task for which it is intended, an apparently simple system like an old trap requires the joint presence and coordinated operation of a number of fundamental parts (a base, a spring, ...). No precursor of the trap that does not possess one of these fundamental elements can fulfil the function of catching mice and therefore, according to Behe, it is not functional “by definition”. This passage to the empirical conclusion that irreducible systems which have a component missing are no longer functional, an indispensable assumption for debunking the Darwinian explanation of the evolution of complex systems, is really a forced logic, as we are unable to exclude that variations in the number, quality and operation of the components of a system could instead give rise to new functions, even quite similar ones<sup>6</sup>. The empirical assumption of Behe’s argument is therefore false. According to the biologist Allen Orr, a system which appears to be irreducibly complex may in fact be constructed by means of the gradual addition of parts which initially are only advantageous and which only become indispensable later. If such a process is able to be repeated several times, at the end the system will strike us as being irreducibly complex. It is obvious that Behe, collecting real examples of complex biomolecular systems, has pointed out interesting problems in research; although he is a biochemist, Behe, who accuses orthodox science of investigating these questions only superficially, has never tried to apply his own knowledge to investigate the evolutionary origin and probe the dynamics of operation of these systems, accepting the response that only an intelligent designer could have produced them intentionally<sup>7</sup>.

Creationists repropose the old dilemma of which came first, the egg or the chicken, expecting scientists to provide a reply on the relative antecedence of the appearance of the DNA molecule (which therefore was able to synthesise proteins only at a later stage, including those which are indispensable for its own synthesis) with respect to the molecules of the proteins themselves (which would have allowed the synthesis of the first DNA, but where would they have originated?). In the absence of a satisfactory reply to the problem, they believe it is necessary to identify the divine hand as the creator of one of the two molecules. This is a new way of supporting the cosmological proof of the existence of God according to St. Thomas Aquinas, who claimed the necessity of an Unmoved First Mover which started everything moving.

In Europe, even disguised as Intelligent Design, creationism found less inured leaders, being confined to a few rare debates in newspapers, and is largely ignored.

Taking France as an example of the European scene, we note the simultaneous presence of different creationist approaches. There is a “*fantasy*” approach, proposed at the end of the Seventies by the journalist Claude Vorilhorn, who adopted the name Rael. His followers, the Raelians, use all the arguments of Intelligent Design to throw discredit on evolution by natural selection and to spread his theory according to which an alien species, the Elohim, artificially created life on Earth, using our planet as a “culture medium” for their biotechnological experiments: through a series of trial and error, the Elohim were able to achieve the high complexity of biological structures that we observe today, and through a series of prototypes (as demonstrated by hominid fossils) they arrived at *Homo sapiens*.

More similar to transatlantic sources of inspiration are the arguments that Daniel Raffard<sup>8</sup> de Brienne presents in his book *Pour en finir avec l'évolution*, a text which expresses in a very similar way the concepts and themes found in the works of the most well-known Italian opponent of Darwin, the Genesisist Giuseppe Sermoni.

Also in France, a version of the evolutionary history which many consider similar to that of Intelligent Design was proposed by the palaeoanthropologist of the CNRS and of the Muséum d'Histoire Naturelle in Paris, Anne Dambricourt Malassé and by Marie-Joseph Deshayes: her *Inside Story*, a name that echoes that of the East Side Story, tells how a butterfly-shaped bone situated inside the skull, the sphenoid, played a key role in the evolution of our species, particularly in the evolution of bipedism.

According to the critics of this approach, the theory expresses a dirigiste and expressly anti-Darwinian view of evolution, based on implications of the theory of self-organised systems, according to which

evolution could proceed thanks to “internal” dynamics that can do without the action of natural selection, and in which the ecological context is irrelevant, or at least secondary. On 28 October 2005, this theory was dealt with in a harshly criticised documentary, broadcast on the French network *Arte*. Some French researchers, led by Professor Guillaume Lecointre of the Muséum d’Histoire Naturelle in Paris, accused the documentary and the theses of the palaeoanthropologist of containing hidden creationist ideas, concealed under the veil of a presumed scientific discovery; according to Lecointre, the existence of morphological restraints that limit the action of natural selection is not at all revolutionary and has been included in the Darwinian explanation for some time; so no “alternative” versions of evolution are needed.

Creationist arguments with a Christian standpoint have been gradually accepted by Moslem movements, even though the Koran does not give any kind of explicit indication concerning the origin of life on earth and the creation. The centre from which the Islamic creationist movement set out is Turkey, where the preacher Harun Yahya (believed to be a pseudonym for a group) is particularly active on this front, supported on the European side by Tariq Ramadan. It is certainly worth spending a little time surfing the rich personal internet site of Harun Yahya, where it is possible to download the complete texts of his books free of charge and to buy DVDs with the scientific documentaries that he has produced. It is advisable to bypass the articles proclaiming his ideas on materialism and on the fact that terrorism is based in Darwinian logic (and can therefore be eradicated only with the intellectual elimination of Darwinism!), so as not to be tempted to abandon the site immediately. Instead let us concentrate on the works that aim to refute the heart of Darwinian theory. In *Darwinism refuted*, a text “for experts” published in 2002, the author analyses “Darwin’s internal scientific crisis”, stressing, as always, its dogmatic acceptance by most of the exponents of a scientific community which neglects to seek valid replies to problems that cannot be solved with the evolutionary approach, showing the road of implosion and decadence that evolutionary theory has now taken. Trying to demolish the myth of homology, and to dispute the materialistic dogma of self-organisation, he devotes a long section to the theory of punctuated equilibrium proposed by Stephen J. Gould and Niles Eldredge in 1972. In his analysis the author applies the typical tools of creationist strategy: forcing interpretations and overlooking certain aspects of the logical arguments necessary for the full understanding and validity of the theory itself, attributing partial and incomplete sentences to the authors, and accusing them of having brazenly rehashed the saltationist and macromutationist theories of Otto Schindewolf and Richard Goldschmidt, adopting a view that genetics has long since disavowed; an idea with very little originality, which already has various precedents in the works of many American creationists.

As Pietro Greco has written, the signals of an invigoration of creationism, in the United States and in the rest of the world, must not be interpreted only as the fruit of the renewal of religious fundamentalism and of its increasingly stronger influences on politics and society. They also reflect an internal problem of science: the fact that it has been polluted by a “pragmatist” model, which views the scientific undertaking mainly as a source of technology, which does not need a strong epistemology, training, critical sense and choices, but only a collection of facts. A science which delegates only to experts the solution of practical, methodological and above all theoretical problems, does not guide people to an understanding of its contents, and does not spread a profound scientific culture, is exposed to the risk of being challenged by alternative paradigms that are closer to common sense, and that have the strong point of making science appear to be that which it really is not.

*Translated by Quickline*

### **Note e riferimenti bibliografici**

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<sup>3</sup> Morris, Henry M. (a cura di) 1974, *Scientific Creationism*, Master Books, Green Forest;

<sup>4</sup> Brumfiel, Geoff 2005, *Who has designs on your students’ mind?*, Nature, 434: 1062-65;

<sup>5</sup> Behe, Michael J. 1996, *Darwin’s Black Box: The Biochemical Challenge to Evolution*, The Free Press, New York;

<sup>6</sup> Pigliucci, Massimo 2001, *Design yes, Intelligent no. A critique of intelligent design “theory”*, Skeptical Inquirer, 25, 5

<sup>7</sup> Ruse, Michael (a cura di) 1988, *But is it science?*, Prometheus Books, Buffalo.

<sup>8</sup> Raffard De Brienne, Daniel 2003, *Per finirla con l'evoluzionismo. Delucidazioni su un mito inconsistente*, Il Minotauro, Roma;

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