



*A conversation with
Jacques Testart, Paris*

“It’s Necessary to Implicate the General Population”

French veterinarian and bioethicist Jacques Testart reasons as to how scientists and the public could become more involved in ethical discourse and political decisions concerning the applications of life science research.

In your public presentations, you often begin by describing yourself as a reformed believer in scientism. What do you mean by scientism?

Testart: Scientism is an ideology, almost a religion, of science that believes that all philosophical and social problems can be solved through science. It is a powerful ideology which often combines with economic interests to impose solutions from laboratories without giving citizens the chance to express their views, because they haven’t been asked to express them, or imposes them even in situations where they have said that they

don’t want the proposed changes, for example, in the case of genetically modified organisms (GMOs).

I first saw this appear in my own career working on assisted reproductive technology (ART) when bioethics was invented, a supervising committee created and laws were made – there I saw above all the force

of scientism and the ideology of technoscience because there wasn’t much to be gained commercially at that time, at least from an industrial perspective, certainly not enough to create a political lobby. However, the lobby that does exist says that people have the right to all the new technologies and that there is no reason to refuse them. This is a very powerful force that can ride roughshod over any ethical discourse.

Later, I became interested in the question of GMOs because there I saw the dominance of this force, that’s to say, the scientism ideology, represented by people like the former Minister, Claude Allegre [*a geochemist who was French education minister from 1997-2000*], and elected members of parliament who are determined to impose GMOs – but it’s not because it’s considered

to be something new that it’s necessarily a good advancement. However, to such people, something that is new is evidently good, and if it isn’t good at the moment, they say it will become good sometime in

the future thanks to more novel scientific progress. That is the ideology of scientism, this religion that wants us to believe that we can always find solutions to improve matters and that everything that comes out of laboratories is manifestly good.

This movement has combined with another current, which I hadn’t encountered in the domain of ART, namely the economic interests that operate in the same direction by saying that we’re going to fall behind if we don’t develop these new technologies. It also uses arguments from scientism assuring us they possess the most fantastic solutions – that they’re going to make plants grow in saltwater, or plants that won’t need any water at all. But shouldn’t they at least wait until someone demonstrates that these marvellous GMOs really exist before glorifying their illusory properties? Overall, it is the combination of these two tendencies that wants to impose solutions on society, and this is also true for nuclear power, nanotechnologies, etc.

In France, we have observed that the scientific organisations, such as the Acad-

emie des Sciences, are totally in agreement with these ideological currents. They have always been in favour of asbestos, GMOs, nanotechnologies, etc. and they attack those who resist the imposition of what they consider to be progress, denouncing them as ‘obscurantists’ [opponents of inquiry, enlightenment and reform]. But this isn’t the case everywhere, for example, in England, the Royal Society has advocated restrictive clauses for nanotechnologies and GMOs, demanding that it should first be shown that these technologies are really innocuous and clear demonstrations that these new products, about which we have no prior experience, are really harmless. The French Academie des Sciences has said exactly the opposite – they’ve said we have to be avant-garde, that we have to be competitive, that we shouldn’t be afraid of progress. Ironically, for ART, we have seen the reverse situation, that’s to say, that France is more prudent than England on what is permitted and how it is regulated but perhaps this is because in this domain France currently has no real mercantile interest.

How can we escape from this situation?

Testart: Who possesses the truth? It’s not the scientists, not the politicians, not industry. It’s the whole of society together. That’s why I became interested in procedures that allow us to understand the viewpoint of citizens, bearing in mind that this viewpoint only has a value if it is a well-formed opinion, that’s to say, if the citizens have undertaken a study of the issues underlying the disputed themes and that they are capable of understanding all the background to the affair – that it’s not simply an opinion or an impression such as we find in opinion polls. This is the reason why I’ve been interested in procedures such as the citizens’ conferences. These are, I believe, democratic models because a multidisciplinary steering committee of experts introduces representative citizens to a conflicting range of opinions on the subject and the citizens can discuss them in detail. At the end of their deliberations, the citizens’ conference brings its own verdict, which I feel is an important viewpoint that should also be taken into consideration by the politicians when reaching their decisions.



Jacques Testart presenting photos of Amandine, the first French test-tube baby, in 1982.

*Concerning these questions of IVF and reproductive technology, were you politically active before you wrote your first books on the matter, *De l’Eprouvette au Bébé Spectacle* [From Test-Tube to Baby Show, 1984], and *L’Oeuf Transparent* [The Transparent Egg, 1986]?*

Testart: No, I wasn’t at all implicated in the discussion because there wasn’t any discussion on these questions at that time.

You mean, it was only during the 1980s that you became conscious of the wider issues?

Testart: Exactly. Before the 1980s there was no debate. There was nothing, apart from an occasional science fiction article. It was only when Louise Brown came into the world [the world’s first test-tube baby born in the UK in 1978] and then Amandine, the first test-tube baby born in France in 1982, that the whole domain of bioethics itself was born. Before then there was no debate, there was no structure, nothing. And scientific researchers like myself, not very numerous, with modest incomes, who worked long hours in our laboratories to perfect the

technology didn’t ask themselves any ethical questions because they weren’t in an environment that asked such questions of them. However, from the moment that Amandine was born in 1982, the Comité National d’Ethique [national ethics committee – France created the world’s first government ethics authority] appeared, and there were numerous discussions in the press. I met lots of people whom I’d never heard of before – psychoanalysts, sociologists and jurists – with whom I learnt many things and who lead me to interrogate myself more profoundly than I had ever done before about the relationship between science and society.

However, ten years prior to this I had already experienced a foretaste of what was to come when I worked on cows, developing the technology of bovine surrogate mothers at INRA. When I made the first surrogate mothers in 1972, I saw how economic in-

terests came to the fore in the bovine breeding co-operatives; they suddenly decided they wanted to rapidly multiply the cows with the highest genetic value by making embryo transfers into surrogate mothers. It was then that I saw a commercial deviation develop around this technology. I had the impression that from the moment I had perfected the technology, it was taken out of my hands. I no longer had any control over it and there were people who wanted to make money from it. In fact, those who directed my research already knew, unlike me, what was at stake and were also aware

“Scientism is a powerful ideology which often combines with economic interests to impose solutions from laboratories without giving citizens the chance to express their views.”

of its underlying absurdity because we were increasing milk production (using surrogate mother technology to rapidly multiply the population of high-yielding cows) at a time when Europe was actively destroying its excess stocks of milk products.

And it was partially because of these commercial machinations that I decided to go from agricultural to medical research. Although I also wanted to move towards medicine because I thought it was for health, for the public well-being. So in 1977 I innocently went to a Parisian hospital where I worked on cultures of human egg cells and perfected the other techniques necessary for successful *in vitro* fertilisation. Only to discover the same situation all over again. I admit I was somewhat surprised and disappointed. The gynaecologists behaved just like the cattle merchants I’d seen a decade earlier.

Have you observed any changes in the 25 years since? In the attitudes of merchants, medics and scientists? Obviously, there’s still a thirst for money.

Testart: No, I don’t think much has changed. Fortunately, there has been the introduction of control systems, which have been updated. There are now regulatory laws. In France, for example, there are authorisations which are granted on site, there are controls, there are annual reports, all of which are necessary – it is no longer possible for someone to pretend they have a 50% successful birth rate simply to maintain their position of authority, that’s the kind of thing people said 20 years ago, which was absurd because in reality we had a success rate much as it is nowadays, that’s to say, around 25% (one successful delivery from four attempts). Currently, we are obliged to provide all our figures because there are official reports. And if we

want to do something novel we are obliged to seek an authorisation – now, I'm not saying that it's a perfect system, in England there's the Human Fertilisation and Embryology Authority, in France we have the Council of Biomedicine. They have a scientific outlook that is very much influenced by the most important medical practitioners and have a tendency to give their agreement to many requests. Nevertheless, all of these decisions are reported, we can read about them in the press, and can discuss them. It is not being done secretly. This is the important point.

However, incredibly, even when it does come out in the public domain, we don't always talk about what's going on. For example, preselecting human embryos. In England, a selection was recently performed to exclude embryos that presented a risk of being born with a strabism (squint) [reported in May 2007]. I don't know if there was much of a debate in England, but in France we heard nothing about this.

The selection of embryos for implantation has been my particular area of combat in IVF. What are we selecting for? Is it a malformation? Is it because some characteristics are considered less human? I think this is a real political problem because technical progress is slowly occurring and it is being made without any public reaction. People are not reacting at all and this is something that worries me a great deal.

How do you view the recent changes in UK legislation authorising research on chimeric human-animal embryos?

Testart: British researchers have been champions in ART for a very long time: artificial insemination in the 18th century, transfer of rabbit embryos in the 19th, IVF and embryo implantation in 1978, pre-implantation genetic diagnosis (PGD) of embryos since 1990, cloning of sheep in 1996. Furthermore, since 1990, they're the only ones authorised not only to conduct research on human embryos but also to generate human embryos as research material, although this extra liberty has still not produced any interesting results. Personally, I've always thought that the embryological differences between man and animals at the start

of development are so small that any study should first be conducted on animal embryos, which also avoids unnecessarily shocking those who can already see a person inside their embryo. The recent authorisation in the UK allowing the fabrication of chimeric human-animal embryos shows the fascination of scientists for the human egg, which they'd like to exploit without reservation. The same temptation also exists elsewhere, including in France. But this

project could, and should, first pass by studies of hybrid animal embryos, for example, rabbit-bovine. Because there is a risk that problems encountered with homo-specific embryonic stem cells, in particular tumour formation, could persist. This project also shows the strength of the genetic mystique, which only considers as important the nuclear DNA, reducing the extraordinary complexity of the ovule to that of a simple sack appropriate for receiving the DNA. Perhaps someone in the UK can explain how and why the ovule is the only cell capable of assuring fertilisation and development; we don't clone by transferring nuclei into sperm or stem cells! This is a major question and we are as capable of addressing it using mice embryos as human embryos.

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The ideal of an informed and debating public

What's the situation like in other European countries, for example, in Germany?

Testart: In Germany, they are more prudent, for historical reasons, notably regarding anything that could recall eugenics. France is probably the second most prudent, then there's also Ireland, with its Catholic traditions. Sometimes, such philosophies

and cultures exist that oppose these measures but they're losing ground. Spain, which is also Catholic, displays no inhibitions on this issue. It's much closer to England than France. It's not simply religion that affects the ethical stance. But what bothers me in particular is the absence of a forum for discussion. Until quite recently, I wrote monthly articles for *Le Monde* and *Liberation*. At the moment I'm not writing for them because they say there's no longer any need, that these issues no longer interest anybody. So where can we find discussion? In parliament? At the moment, the French deputies and senators are inviting experts to come and help them draft the text for the law on bioethics for next year. They also did this in 1994 and 2004 and each time I was invited along with other figures expressing a range of different opinions. But we are no longer wanted. Instead, the only ones who are still invited by the politicians are those who want to develop new technologies. If you like it's an example of the triumph of scientism. For example, the only expert in psychology who is currently consulted by the politicians and who appears in all the debates on surrogate mothers, is one of the very few psychoanalysts who favours the development of this technique, as if the only thing that interests the politicians is enlarging the range of new technologies that they can offer to the population.

There has recently been a radical change in French government policy towards new technology and applied research but no one seems to be asking what the meaning of the research is any longer.

Testart: Exactly, there is no longer any question about the sense, it's now a matter of not making any stupid errors. In 2005, French law recognised the principle of precaution ("the absence of certainty must not delay the adoption

of appropriate and effective measures to avoid serious and irreversible harm") but we have recently seen a narrow interpretation of this principle. Now, scientific experts assess the potential risks of new technology in terms of potential effects on human health and the environment. Only the precaution remains, there is no longer any

interrogation as to the responsibility or the sense of the actions and, above all, there has been a loss of concertation.

In bioethics, there was never any concertation, neither in England nor in France, in the sense that it's the politicians who make the decisions, which is normal, but they ought to be making them after a process of due consultation. For example, in the case of GMOs, even if they have made contrary decisions, they have gone through the procedure and given the false impression that they are asking the local population for their opinion. But in the case of bioethics they're not even pretending to ask for other opinions.

What is your opinion is concerning the general view that scientists have of bioethics. You've spoken of problems that you've encountered when dealing with politicians but what kind of difficulties have you had with other scientists?

Testart: That's an amusing question, because I've noticed that the scientists who are not in the IVF domain are much more

cautious in their assessment of the issues. In fact, they are even more prudent than the average citizen because they know that science is relative. Nevertheless, when the politicians and the media want to ask questions, they go to the experts who are the specialists in their domains, and, unfortunately, it is these scientists who are often the most permissive. In fact, I think this is similar in most domains. The researchers in nuclear energy, for example, are favourable towards nuclear energy, agricultural researchers are favourable to GMOs, and it is these scientists who are invited each time to serve as advisers to help the politicians establish the regulations and the laws governing their own domains. So there's something quite bizarre here. It would almost be better to ask scientists in other domains because they have the scientific background knowledge but they're not directly biased either materially or ideologically; they're from outside the subject and hence their opinion is much more interesting. But the

determining viewpoint remains that of ordinary citizens.

In my relations with other practitioners of ART, I have often been in open conflict with medical chiefs who blame me for wanting to block "progress", particularly over the pre-selection of human embryos, which I maintain heralds a new form of eugenics. But they have resolved this problem by seeing to it that the

bodies responsible for official deliberations (the National Ethics Committee, Council for Biomedicine, academies, parliament...) do not take this position into consideration. Like this, they've stifled any profound discussion of this practice, which I think certainly represents the most serious future threat from ART for humanity.

Do you think there's a need to reformulate scientific councils?

Testart: I think the experts are indispensable, the scientific councils are also indispensable. But between them and the politicians, that's to say when considering the lives of the people who are directly concerned and the decisions that affect the general population, it is necessary to implicate the general population. Unfortunately this doesn't happen at the moment and it's for this reason that I propose the citizens' conferences. For example, on changes to the bioethics laws, we would need citizens' conferences to inform people of the decisions made by the scientists. There would be experts who are for and those who are against. They would expose their respective viewpoints and then they would be questioned by a sample of the population, say fifteen individuals, people who have no particular interest in the issue, who are just citizens, who would formulate their joint opinion. I believe this could be very useful in helping the politicians to reach their decisions. Currently, such a process doesn't exist; it's like there's a link missing between politicians and society. We pass directly from the expert or the industrial representative to the legislature. The politicians are only consulting ideological or economic interests, especially the latter, which have an enormous influence on their outlook. Citizens are at best restricted to a consultory role, never to a real participation in the decision-making process. This is why the politicians' promises of "participatory democracy" are so deceitful.

INTERVIEW: JEREMY GARWOOD

Jacques Testart

is a specialist in the domain of assisted reproductive technology (ART). He began his research career at INRA (the French agricultural research institution) where he pioneered the successful development of bovine surrogate mothers in 1972. In 1977, he became a research director at INSERM (France's medical research organisation) and began working on human reproduction,



becoming the 'father' of France's first test-tube baby in 1982. His group also successfully froze human embryos in 1986, and achieved in vitro fertilisation (IVF) by direct injection of sperm in 1994. Besides the 300 research papers published during his scientific career, Jacques Testart has attained public prominence for his critiques of 'technoscience', as well as his campaigns for research based on ethical principles rather than market-driven forces. He advocates a more transparent and democratic forum for discussion of new technologies, giving numerous public seminars and appearing on radio and television. He has written columns for the French newspapers *Le Monde*, *Le Monde Diplomatique*, *Liberation*,

and *La Decroissance*, as well as published more than a dozen books dealing with the ethical limits of scientific research and technological change. A member of several commissions on reproductive technologies, he was president of the French Commission for Sustainable Development (CFDD) from 1999-2003, and has also been active as president of the Fondation Sciences Citoyennes (science citizen foundation) and Inf'OGM (presenting scientific, technical and legal information about genetically modified organisms, GMOs). He is on the scientific committee of the Association pour la Taxation des Transactions pour l'Aide aux Citoyens (Association for the Taxation of Financial Transactions for the Aid of Citizens - ATTAC), an international group opposed to the economic excesses of globalisation.

Jacques Testart has a personal website (<http://jacques.testart.free.fr/>) presenting many of his published essays (mostly in French).

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