

A lifetime in biomedical research: an interview with Silvio Garattini*

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ABSTRACT

In this interview, Silvio Garattini addresses the critical need for independent research free from industrial influence, and the structural challenges facing the Italian National Health Service. He also offers a candid assessment of the pharmaceutical industry and its priorities, arguing that prevention, multidisciplinary, and scientific education are the foundations on which future generations must build a more equitable and effective approach to health.

Americo Bonanni (AB): *You have gone through decades of biomedical research, from the pioneering post-war period to the current integration of disciplines and technologies. Which developments do you believe have most profoundly changed the way science and medicine are conducted in Italy and in Europe?*

Silvio Garattini (SG): Research cannot be longer linked to the individual; it requires groups and often national and international networks of researchers. Biomedical research has become interdisciplinary and often requires complex equipments.

AB: *The issue of independent research is one of the recurring themes of your work. What role can it play today, and what conditions are necessary for it to remain a credible safeguard in the service of public health?*

SG: Independent research, especially that which should compare the effectiveness of drugs with the same therapeutic indications, is virtually absent in Italy and little practiced in other countries. This allows each industry to claim that its product is the best without the possibility of being contradicted. Much more public funds are needed to promote independent research.

AB: *From your long-term perspective, which factors have contributed to strengthening or weakening the Italian National Health Service, and which directions do you consider essential to ensure its sustainability, equity and quality in the coming years?*

SG: The National Health Service is certainly still an extraordinary asset that we must support for ourselves, but above all for those who will follow us. We are losing doctors and nurses who migrate, primarily because salaries are too low compared with private healthcare and the European context. The most important problem is certainly the shortage of community-based medicine, which leads to overcrowding in emergency departments. Community health centers must be established, all over the national territory as soon as possible.

AB: *Genetics and molecular biology have transformed a significant part of research. What real impact have they had on clinical practice, and how are they integrated today with other determinants of health?*

SG: Today it is difficult to imagine medical research that ig-

nores genetic and biomolecular variants at any level. In reality, they are still relatively underestimated in medical training, which has remained anchored to the past with regard to teaching subjects, ignoring multidisciplinary.

AB: *The experience of the Mario Negri Institute in the field of hemostasis and thrombosis contributed to a scientific pathway that led to the study of prostaglandins and fibrinolysis (with the GISSI studies on aspirin and streptokinase) and to the hypothesis of a common soil between cancer and thrombosis. What were the insights and contextual conditions that made the development of this line of research possible?*

SG: The GISSI clinical studies were “disruptive” because they changed the concept of the cause of myocardial infarction. Experimental research on platelets, blood coagulation and fibrinolysis was fundamental in demonstrating the importance of thrombosis, as the blockage of the coronary arteries, as opposed to the idea that infarction solely depended on coronary artery contraction. The context in which the research on aspirin and prostaglandins developed at our Institute and the complete publication of the results we obtained also prevented the creation of patents, with the consequent increase in the prices of the drugs concerned. The pioneering research on thrombosis and cancer was and still is a good example of multidisciplinary.

AB: *You have repeatedly stressed that health, particularly cardiovascular health, does not depend solely on drugs. Was there a particular moment or specific evidence that led you to strengthen this conviction during your scientific activity?*

SG: We always talked about good lifestyle habits that everyone knows but does not practice. The research performed at Mario Negri Sud Institute in the Nineties was particularly innovative in this respect. As an example, type 2 diabetes is a preventable disease, yet the fact that more than 4 million people in Italy are presently affected is one of the main causes of the increase in visual, cardiovascular and renal diseases. Low physical

* Professor Silvio Garattini, President of the Istituto di Ricerche Farmacologiche Mario Negri and one of world’s most distinguished pharmacologists, reflects on over six decades of biomedical research and its evolving relationship with public health.

activity, inappropriate diet and excess body weight are the “bad” lifestyle habits that require greater attention.

AB: *Looking to the future, what priorities should biomedical research address in order to respond effectively to the health needs of future generations?*

SG: A major cultural revolution is needed. Diseases do not fall from the sky, but mainly depend on our behaviors. Prevention must therefore be prioritized to reduce the need for treatment. We do not have in Italy a higher school of public health to train National Health Service managers in this sense. Our school system does not deal with health. One hour a week in every class, with expert teachers, would be enough to change private and public health over time.

AB: *Over the course of your long experience, how has the figure of the researcher changed, and which characteristics do you still consider essential to carry out this profession with rigor and responsibility?*

SG: Curiosity is certainly required, yet today it is not stimulated, as science is not part of our culture: it does not exist indeed either in schools or in the mass media. There is a strong need to provide greater exposure to laboratory work, which is now practically absent in any area of training. For this reason, we have in Italy, for every 1,000 total workers, around 50 per cent fewer researchers than the European average.

AB: *Why, in your opinion, does cancer research in Italy attract much more attention from private foundations than research on thrombosis and cardiovascular disease?*

SG: Because, at difference with cardiovascular disease, cancer is frightening. In Italy, around 180,000 people die each year from cancer, although 40 per cent of cases are preventable. It would be enough to act, at the level of general population, on smoking and alcohol.

AB: *What do you appreciate and what do you criticize about a pharmaceutical industry that deals with cardiovascular drugs (anticoagulants, statins, antihypertensives, antidiabetics, etc.)?*

SG: I believe pharmaceutical industry focuses on increasing the market rather than thinking about patients. It promotes placebo-controlled studies, rather than the comparison of a new compound with those already in use, has the monopoly of information, funding educational activities and advertisement and stimulates lowering of normal ranges for biochemical parameters, such as blood cholesterol levels, to increase pharmacological treatments. Industry seeks profit, without any valuable contradiction, as unfortunately also many Medical Associations and Scientific Societies are absent in the national scientific and cultural debate.