Comunicar ciència
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FROM NIGHT BUSTLE TO PRINTED QUIETNESS

François Jacob

Institut Pasteur

Address: Institut Pasteur. 25, rue du Dr. Roux. 75724 Paris. CEDEX 15.
E-mail: *fjacob@pasteur.fr*

RESUM

Des del punt de vista d'un científic, la comunicació científica entre col·legues significa la possibilitat de reconeixement dels postulats que es desprenen de la seva recerca, és la ciència de dia, la quietud de la ciència impresa. Però hi ha una altra ciència, la de nit, que comporta tota la part creativa i emotiva de la ciència.

Paraules clau: ciència / comunicació / recerca / ciència de dia / ciència de nit.

SUMMARY

For the scientist, science communication between colleagues entails the possibility to make research known, which is day science. But there is another science, night science, which involves the creative and emotional part of science.

Keywords: science / communication / research / day science / night science.

For the scientist, the theme of this issue, Science communication, has two aspects: communication of his results to other scientists and communication of the general trends of science to the general public. In this assay, I will address the first aspect only.

For a researcher, it is not enough to do experiments, obtain facts, use them to form a theory. He must also make these results known. Convince his colleagues of the importance of his work, of the value of his theory. In short, he must seize every opportunity to advertise, to peddle his wares. Expose

it to public criticism and commentary. To jealousy as well. For "what makes the profession of research irksome", said André Lwoff, "are the discoveries of others!"

Once admitted, once taught, science is cold. As cold as the techniques that derive from it. As cold as the texts explaining its content or the books reporting its history. Science in books has two aspects, which could be called day science and night science. Day science employs reasoning that snaps together like gears, and achieves results with the force of certainty. One admires its majestic arrangements as one would a da Vinci painting or a Bach fugue. One walks about in it as in a formal French garden. Conscious of its progress, proud of its past, sure of its future, day science advances in light and glory.

Night science, on the other hand, wanders blindly. It hesitates, stumbles, falls back, sweats, wakes with a start. Doubting everything, it feels its way, questions itself, constantly pulls itself together. It is a sort of workshop of the possible where the future building materials of science are made. Where hypotheses take the form of vague premonitions, of hazy sensations. Where phenomena are still mere solitary events with no link between them. Where the plans for experiments have barely taken shape. Where thought proceeds along sinuous paths, winding streets, most often blind alleys. At the mercy of chance, the mind frets in a labyrinth, deluged with messages, in its quest for a sign, a wink, an unexpected connection. Like a prisoner in a cell, it paces about, looking for a way out, a glimmer of light. Ceaselessly, it plunges from hope to disappointment, from exaltation to melancholy. It is impossible to predict whether night science will ever attain the day condition. Whether the prisoner will emerge from the dark. When that happens, it happens fortuitously, out of the blue. By surprise, like spontaneous combustion. No matter where, no matter when, like thunder. What guides the mind, then, is not logic. It is instinct, intuition. It is the need to see clearly. It is the stubborn desire to live. In that endless inner dialogue, amidst the innumerable suppositions, connections, combinations, associations that constantly flash through the mind, a beam of light sometimes rends the darkness. Suddenly, the landscape shines with a blinding light, terrifying, stronger than a thousand suns. The initial shock spawns a hard struggle with the habits of thought. A conflict with the universe of concepts that governs our reasoning. One is not yet authorised to say whether the new hypothesis will get beyond its initial form of a rough sketch and become refined, perfected. Whether it will withstand the test of logic. Whether it will gain admission to day science.

How does one describe a piece of research work? How does one retrieve an *idée fixe*, a constant obsession? How does one recreate a thought centred on a tiny fragment of the universe, on a "system" that one turns over and over to view from every angle? How, above all, does one recapture the sense of a maze with no way out, the incessant quest for a solution, without referring to what later proved to be *the* solution in all its dazzling obviousness? Of that life of worry and agitation, there lingers most often only a cold, sad story, a sequence of results carefully organised to make logical what was scarcely so at the time. Faces and words associated with certain events also survive. Days, too, that have emerged from the greyness. Days lived with greater force, intensity; days that remained on the level of consciousness.

There is a style in science. As in art, in literature, in painting. Not just a way of looking at the world, but also questioning it. A way of acting with regard to nature and of

talking about it. Of concocting experiments, executing them, drawing conclusions, formulating theories. Furnishing them with a shape from which a story may be drawn, be it spoken or written. There is an infinite variety of styles. Direct or convoluted. Concise or multifaceted. A workman's style or a cavalryman's. An eagle's or a mole's. A visionary's or a follower's. A great lord's or a shopkeeper's. A paranoiac's or a melancholic's.

Endless discussions yet again. But this time about writing. About putting this mass of data gathered over three years in order. About giving it shape. Creating a story from it: the official transcript of this research. A story with enough force, enough persuasiveness to convince the rest. To get them to adopt our point of view and shed light on their own research.

A strange exercise. Science is above all a world of ideas in motion. To write an account of research is to immobilise these ideas; to freeze them, like describing a horse race with a snapshot. It is also to transform the very nature of the research; to formalise it. To substitute an orderly train of concepts and experiments for a jumble or disordered efforts, of attempts born of a desperate eagerness to see more clearly; and also of visions, dreams, unexpected connections; of simplifications often childish, random soundings in every direction, never knowing where one is going to end up. In short, writing a paper is substituting order for the disorder and agitation that animate life in the laboratory. Nevertheless, as the work progresses, how can we not seek to acknowledge the roles of chance and inspiration? But to get some work accepted and a new way of thinking adopted, it is necessary to purify the research of all affective or irrational dross. To get rid of any personal scent, any human smell. To proceed on the royal way that leads from babbling youth to blooming maturity. To replace the real order of events and discoveries with what appears as the logical order, the one that should have been followed had the conclusion been known from the start. There is a ritual in the manner of presenting scientific results. Rather as if one were writing the history of a war using only the official press releases of the general staff.

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ABOUT THE AUTOR

François Jacob discovered, with André Lwoff and Jacques Monod, the role of messenger RNA and mechanisms of genetic regulation in bacteria. For these discoveries they were awarded the Nobel Prize of Physiology or Medicine in 1965. Besides his work in research, François Jacob has written several books of science dissemination: *La logique du vivant; Une histoire de l'hérédité* and *Le souris, la mouche et l'homme*; and a book of memories, *La statue interierur*. He is an honorary member of the Catalan Society of Biology.