I simply didn't think, okay? Little Boy and the ethical boxes of innovation

Alice Benessia

The relationship between thinking and doing, understanding and creating, knowledge and power is ambiguous, delicate and mutable, and concerns us all. Every day we are called upon to make decisions, to act, not only on the basis of what we know, but also of what we wish for and believe in.

On a collective level, the relationship between the facts that constitute the basis of our common knowledge, and the values that inspire the directions to take and the questions to answer, has been regulated since the advent of the modern state by two ideally distinct and autonomous systems of legitimation. Science, responsible for facts; the processes of government, more or less democratic, devoted to the management of values.

Technology falls in the middle. Traditionally founded on scientific knowledge, it is also a tool for changing our collective lifestyle, thus calling for institutional governance: not only political but also juridical, social and cultural.

Today, what we call 'innovation' lies at the same intersection, and concerns us as scientists, entrepreneurs, political decision-makers and citizens, capable of thinking, acting and creating. On the basis of what reasons, be they ethical or cognitive, do we decide how to 'innovate'? to what ends? Reflecting on the past may be useful to understand how to move towards the future.

In 1942, shortly after the US entered WWII, a young and brilliant American theoretical physicist named Richard Feynman was asked to work at Princeton by an older colleague, Robert Wilson, to verify the efficiency of a machine called the isotron, for the production of enriched uranium to be used in the first atomic bomb. A few months later, at the beginning of 1943, Robert Oppenheimer invited the Princeton workgroup to join the renowned Manhattan project, the American research plan for the construction of the first nuclear device located in the secret military base of Los Alamos, a semi-desert location not far from Santa Fe in New Mexico.

Like the other physicists, chemists, engineers and technicians recruited by Oppenheimer, Feynman (then little more than twenty years old) joined the Manhattan Project in order to win the nuclear arms race against Germany and prevent the disastrous scenario of a Nazi regime endowed with atomic warheads.

In May 1945, Germany surrendered, but the work at Los Alamos continued. On July 16, the first nuclear device was tested, called the Gadget, in the famous Trinity Test. It was the first open-field irreversible experiment on the field of an unprecedented power. On August 6 1945 the first atomic bomb, Little Boy, was dropped on Hiroshima in Japan: the devastating device worked dramatically well and at Los Alamos the event was widely celebrated as a great success.

In an interview in 1981 for the BBC, Feynman recalls the general euphoria and thinks back to that moment of his life saying: "But what I did immorally – I would say – was not to remember the reason that I said I was doing it, so that when the reason changed, because Germany was defeated, not the singlest thought came to my mind at all about that, that that meant now that I have to reconsider why I am continuing to do this. I simply didn't think, okay?" ('The pleasure of finding things out', BBC 1981–1982).

The relationship between thinking and moral responsibility proposed by another key figure of that period comes to mind: the philosopher of totalitarianism Hannah Arendt, who fled from Germany to the United States in 1941. In 1961, Arendt was sent to Jerusalem by The New Yorker to document first hand the trial of the Nazi criminal Adolf Eichman. In the face of Eichman's radical lack of autonomous thinking, Arendt formulated the idea of 'the banality of evil', which was to become the title of her most controversial work. The root of immoral actions need not be sought in the degradation of the values that drive the human soul, but in the inability of the individual to think autonomously. In an essay written in 1971, she went back to the issue again, saying:

> Is our ability to judge, to tell right from wrong, beautiful from ugly, dependent on our faculty of thought? Do the inability to think and a disastrous failure of what we commonly call conscience coincide? ('Thinking and moral considerations: a lecture' 1971).

It is hard to imagine that the scientists of Los Alamos, chosen among the most capable and brilliant minds of the anti-Nazi West, were unable to think. What happened then?

The Manhattan Project had been set up with a very precise mission: using nuclear physics to build a device with a power thousands of times greater than the one of conventional weapons. In turn the moral reasons behind the mission were explicit and shared: to build an atomic bomb before Nazi Germany.

The univocally defined aims and motivations were supported by a huge outlay of economic and human resources, in what is considered the first major modern techno-scientific undertaking: the advent of the so-called 'Big Science'. Building the atomic bomb was possible and desirable because it was needed. By endorsing the project, the main actors were therefore immersed in an 'ethical box', perfectly sealed along the three orthogonal axes of competence, desire and duty. Inside the box, protected by the military organisational machine of the project, the quality of their research (thought and action) was therefore measured exclusively in terms of its fitness for the purpose of the mission. The perfect detonation and the dramatic destructive capacity of the first bomb was therefore interpreted as a great success.

Today, how do we assess the quality of innovative research (thought and action) of scientists – physicists, biologists, chemists, medical doctors, agronomists, ecologists, engineers etc. – designated with the task of

preserving and improving the living conditions of our species? What are the ethical and cognitive reasons for delegating to science and technology (and them alone) a rescue mission of such scope? Who decides what are the most appropriate means to innovate our way of living? What do we want to, what can and must we sustain or eliminate? And for whom?

Reflecting on the ethical boxes that are embedded in the contemporary idea of innovation, with one eye to the past and one to the present, may turn out to be an essential condition to exercise our capacity for autonomous and creative thinking – as well as our consciousness.