

PROSPECTIVE BIOETHICAL PERSPECTIVES FOR THE MEDICINE OF THE FUTURE

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The Precautionary Principle in the Society of Acceleration and Postmodern Deconstruction

A Socio-Bioethical Reflection

Raffaele Sinno

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“The precautionary principle requires an active use of doubt.”
(François Ewald)

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Before beginning this reflection on a foundational theme in bioethical and sociological research, I am pleased to greet everyone present and to thank the moderator, Prof. Cav. Vincenzo Mallamaci, First Councillor of the Grand Council. I also extend my grateful greetings for having welcomed and appreciated my presence to the Grand Master of the Order, Count Daniel Von Rechitar; the Lieutenant General, Cav. Manlio Bertucci; the Grand Chancellor, Cav. Stefano Mercuri; and all the distinguished members of the Grand Council, Ladies and Knights.

In our era of the Technocene, bio-digital progress is redefining the cultural and social coordinates of human existence. This is not merely an operational revolution: what is changing is the very structure of relationships, the processes through which identity is constructed, and our systems of values. In this postmodern scenario, dominated by frantic economic and scientific acceleration, the time required for ethical reflection and deliberation is being dangerously compressed. Bioethics faces this crucial challenge: to guide human action immersed in constant and undefined social change. This dynamic produces a profound split between the deliberative and operational moments of the individual, within an existential condition of an eternal present that erodes biographical memory and prevents the planning of long-term projects (Leccardi 2018). Beyond an institutional crisis, we are witnessing the weakening of that symbolic, normative and relational universe that enables individuals to orient themselves within a horizon of shared meanings. The flexibility of anthropological models creates a context of permanent instability in which identities, roles and affiliations are constantly redefined (Iannone 2009).

A significant contribution to understanding this phenomenon is Hartmut Rosa’s theory of social acceleration. The German sociologist identifies, in advanced modernity, the dynamic relationship among three processes—technological innovation, social change and the intensification of the pace of life—which generates the illusion that we can emancipate ourselves from the inevitable entropic degradation of devouring time. An evident paradox emerges: artificial acceleration induces and amplifies a cognitive and existential atrophy that nullifies our capacity to resonate with the world, dissolving every authentic bond with otherness, institutions and the biosphere (Rosa 2019).

This relational fracture has its most critical effects in the vulnerability of younger generations. Employment insecurity, economic instability and the constant need for professional updating reduce the possibility of planning for the future. Phenomena such as lifelong learning, the spread of micro-credentials and the fragmentation of working careers continually push further into the future the traditional milestones of personal autonomy, family stability and parenthood. Individual expectations are expressed within limited horizons, while the common good is perceived as distant and unattainable. An ethical model guided by individualism takes shape, placing the immediate consumption of experience before collective planning and the stability of relationships over time.

This situation has been described by several contemporary authors. Zygmunt Bauman introduced the concept of liquid modernity, highlighting the fragility of social bonds and the

volatility of collective affiliations (Bauman 2017). The Hungarian philosopher Ágnes Heller showed how temporal compression compromises the individual's capacity to plan (Heller 1999). The Italian sociologist Carlo Mongardini identified the age of contingency as one of the defining features of postmodern culture (Mongardini 2009). All these approaches point to the same observation: contemporary people increasingly struggle to interpret their existence within a coherent narrative oriented towards the future.

The category of acceleration, however, goes far beyond the sociological dimension and reveals significant bioethical implications. When the speed of innovation exceeds our understanding of its consequences, a gap emerges between technical power and moral responsibility. At this juncture, Hans Jonas's thought converges with that of Hartmut Rosa. While the sociologist diagnoses the temporal pathology of advanced modernity (Rosa 2013), the philosopher outlines its normative corrective (Jonas 1979). The speed of decision-making also prevents a genuine assessment of the consequences that scientific developments may have for future generations. To counter the horizon of the "dictatorship of immediacy" (Stell 2014), Hans Jonas's ethics of responsibility requires us to act in a way compatible with the continued existence of authentic human life on Earth, bridging the gap between the hypertrophy of technological power and our limited capacity for foresight. The operational instrument of this ethics is the adoption of the precautionary principle, which makes it possible to examine scientific uncertainties capable of causing serious and irreversible harm (Acquaviva 1993).

In the contemporary context, a real asymmetry emerges: the exponential increase in our ability to intervene in life, the environment and evolutionary processes is matched by a drastic reduction in the time available to assess the implications. There is a need to adopt the imperative of governance based on prudential rules, in order to evaluate the direct and indirect effects of innovation on human beings, the global ecosystem and social relationships. Within this horizon, bioethics recovers Van Rensselaer Potter's original insight (1971), moving beyond the boundaries of traditional medical ethics: it presents itself as a bridge to the future, capable of connecting human progress with its fundamental values, within the horizon of a science of survival that is sustainable. In light of this responsible orientation, bonds of cooperation and mutual recognition regain universal significance (Rogan 2017).

The nature of the global risks emerging in technological postmodernity makes traditional protection and insurance mechanisms increasingly inadequate. Ulrich Beck interpreted this transformation through the category of the "risk society" (die Risikogesellschaft), showing how threats produced by modernisation acquire global and intergenerational reach (Beck 1986). Recurring pandemics, global economic crises, social tensions arising from demands for greater rights, and geopolitical conflicts over energy sources cannot find lasting solutions solely through policies of containment or surveillance, or through agreements based on the logic of partitioning resources according to the principle of might makes right. Instead, their structural roots must be understood, and action must be taken through educational and legislative models founded on a balanced precautionary principle, open to socio-anthropological concerns and capable of envisioning a future not governed by the heuristic of fear, since Homo sapiens has all the capacities needed to avoid self-destruction.

In biomedical research and artificial intelligence, this application is particularly urgent, in order to address socio-political models that envisage enhancement detached from ethical analysis. The adoption of procedures for analysis and oversight enables the core principles of bioethics—autonomy, beneficence, non-maleficence and justice—to guide human action in concrete terms.

The importance of the precautionary principle is evident in its evolution within international law. Codified by the 1998 Wingspread Declaration and by the European Commission (2000), it establishes that the absence of scientific certainty cannot justify postponing proportionate measures to prevent serious and irreversible harm. This approach has its roots in das Vorsorgeprinzip, developed within the culture of the German environmental movements of the

1970s, and in Principle 15 of the 1992 Rio Declaration. Its fundamental requirements are:

1. Reasonable scientific uncertainty.
2. A potential serious and ethically unacceptable harm.
3. The burden of proof rests with the party proposing the innovation.

Recent international literature has identified three forms of the precautionary principle. The first is strong or substantive precaution, which imposes moratoria and absolute bans on research, as illustrated by the case of biophysicist He Jiankui. In 2018, the Chinese scientist announced the birth of twin girls, Lulu and Nana, whose CCR5 gene had been modified using the CRISPR/Cas9 method to make them resistant to HIV. The experiment prompted an immediate reaction from the international scientific community which, through an appeal published in the journal Nature, urged governments to introduce a ban on germline genetic manipulation. Despite the researcher's criminal conviction and three-year prison sentence, the case raised a crucial bioethical dilemma linked to the absolute unpredictability of the long-term effects on the health of the newborns.

The second form is procedural precaution, which analyses decision-making processes relating to scientific and technological risk. In contrast to the logic of surveillance capitalism—a model theorised by Shoshana Zuboff (2019)—is the prospect of a balance between technological development and its social consequences, an idea formulated by Sheila Jasanoff (2016). In practical terms, there are specific safeguards for the protection of individuals, such as the requirement for informed consent in pharmacological and clinical trials, and Good Clinical Practice (GCP) standards, designed to ensure the ethical validation of scientific progress.

Finally, global precaution addresses the major environmental and political challenges facing society, based on the assumption that human health is inseparable from the balance of the ecosphere, in line with the One Health perspective already outlined by V. Potter (Sandin 1999; Steel 2014; Jonas 1979). If social acceleration makes us increasingly alienated, depriving us of the ability to resonate with the world (Rosa 2019), precaution restores the time needed for responsibility. This outlines a project inviting us to become aware of our possibilities and limitations, in the spirit of a human presence that is not superfluous, following the lucid and prophetic lesson of the philosopher Günther Anders.

Conclusions

The process of temporal compression tends to absolutise the present, creating a restricted horizon that weakens historical memory and obscures future planning. In this context belongs the diagnosis offered by the philosopher Byung-Chul Han regarding the "achievement society", in which the imperative of continuous growth leads individuals to submit voluntarily to processes of self-optimisation. The intertwining of accelerated rhythms of life and consumerist logic thus generates a constant tension towards the new and the immediate which, while multiplying opportunities and experiences, weakens the ability to give them duration, depth and meaning.

To avoid these deviations, contemporary individuals can reject the attitude of the blasé, understood by Simmel as an inclination towards indifference, apathy and the monetisation of feelings. It follows that we must avoid the excesses of both technophobic and technocratic positions, guiding progress towards a prudent and balanced ethical project capable of recovering a sense of human time. In complex societies, building a relational paradigm requires authentic anthropological care founded on mutual respect.

This perspective stands in opposition to current trends which, as Daniel Cohen has observed, risk transforming the archetype of Homo sapiens into that of Homo numericus. To avert the risk of such a devaluation of human existence, the precautionary principle must be applied to regulate, promote and protect life as a universal good that is non-negotiable and unavailable to market logic.

In this cultural scenario, bioethics presents itself as an indispensable epistemic and normative discipline for governing the complex crisis of the contemporary world. Going beyond the procedural dimension of biomedicine (Ten Have 2016; Berlinguer 2000), this reflection addresses the dynamics of social acceleration, reaffirming human dignity and intergenerational sustainability against a reductive and utilitarian vision of life (Beauchamp & Childress 2019).

Thank you very much for your attention.

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