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Catastrophe

Bruno Villalba¹

Abstract: this article discusses how the notion of ‘catastrophe’ has evolved over time. Having examined the origins of the notion, it shows the transition from the desire to dominate nature in order to mitigate danger (the danger of a natural disaster), to enacting rational disaster-management strategies; then to implementing policies aimed at protection, prevention and risk management. However, in the Anthropocene, the nature of catastrophe has changed. Catastrophes are now characterised by threats on a planetary scale, systemic threats relating to social and eco-systems, and to long-term sustainability. The damage wrought is transcendental, affecting technology (chemical, nuclear, etc.), society (inequality) and the environment (climate, biodiversity, etc.). All these issues are converging, meaning we are now on the horns of a catastrophe such as the world has never seen.

A ‘catastrophe’ is a sudden and dramatic incident, which disrupts the normal course of events, and profoundly shifts the way in which society is organised. Such events are often the result of natural phenomena (e.g. volcanic eruptions, tsunamis, violent storms, meteor strikes, etc.). However, historically, these events have only been classified as catastrophes if humans have been affected. That is, events are labelled catastrophes, or disasters, when they have claimed lives and wreaked massive damage (to homes, infrastructure, etc.). Sometimes, the term may refer to the destruction caused by an enemy power. Now, though, in the Anthropocene, with burgeoning technological prowess (extractivism techniques, chemistry, nuclear technology, etc.), the causes of catastrophes are shifting (now, typically, they are caused by human activity). In addition, the timescales are different (a catastrophe today may well have a *permanent*, irreversible impact). The geographic area affected is broader than ever: potentially, they may be truly global. Finally, their consequences (for example, a nuclear holocaust) will impact both humans and non-humans (the collapse of biodiversity).

The etymology of catastrophe is rooted in Greek (*katastrophê*, meaning a major upset) and Latin (*catastropha*). In Greek tragedy, the catastrophe is the decisive event which brings about the disastrous upheaval. It allows the audience to understand the deeper meaning behind the intrigue, and the reasons for the dire turn of events in the plot. Monotheistic religions attach very specific meaning to catastrophe. It is viewed as the expression of a deity’s explicit will to teach humanity an unforgettable lesson (the Genesis Flood narrative, the destruction of Sodom and Gomorrah, etc.). The objective in these narratives is to change human behaviour in order to avoid future punishment. Thus, the catastrophe has meaning, as punishment for a transgression, and is intended to re-establish normal order in keeping with Providence. As rational knowledge (mathematics, physics, and Earth sciences) has developed, we have been able to move away from this fatalistic view of natural disasters, or the punitive perception of them, building up an objective understanding of the causes of catastrophes.

Particularly from the latter half of the 19th Century, political authorities have begun taking more direct action, to offer a political response to danger (notably, the danger of natural disasters), with policies aimed at *protection*, *prevention* and finally *risk management*.

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Protection entails acceptance that a catastrophic event (a proven, known risk) is possible, though it may be unpredictable (due to lack of tools capable of gauging the situation and predicting outcomes). Protective measures aim to mitigate the effects of a catastrophe by using technology to reduce the extent of the damage (e.g. construction standards to combat fire, etc.).

Prevention comes into play when we are better able to quantify the risk of an event (i.e. its probability) and implement protocols to limit the likelihood of its occurrence (e.g. vaccination against epidemics, insurance policies, etc.). It is based on the development of experimental science (engineering, medicine, etc.), which produces new knowledge about a natural hazard, and then industrial science, which offers solutions to mitigate its effects.

Finally, *risk management* represents a rational, measured view of the existence of the danger, but also the advent of preventative measures (a speculative gain) so as not to hamper modern technical operations. Prevention and risk management encourage the development of bureaucratic administration, to oversee the management of the threat, but also liberal economic activity, to profit from the uncertainty (insurance dynamics, etc.).

This rationality offers the illusion that we can effectively control the risk of catastrophe, through technical power, rational territorial organisation, and collaboration between the State and the private sector. However, the rise of the thermo-industrial society, and its obsession with security (notably in military matters), has led to a drastic shift in the concept of catastrophe. The definition has been extended; the causes of catastrophes are now endogenous to human societies (demographic pressures, military and civilian nuclear technology, zoonotic diseases, etc.), and they now affect the entire planet (runaway climate change, the collapse of biodiversity, etc.). Worse still, the rational thinking upon which our preventative measures are founded may lead some to wreak a catastrophe of horrific proportions: the planned extermination of an entire sector of humanity. (The Hebrew term *Shoah*, שואה, means 'catastrophe', and is used specifically to refer to the Nazi Holocaust) (Arendt, 1963). Though our societies have devised strategies of resistance against such catastrophes, history shows that they have *not* been prevented from ever recurring. The deliberate elimination (total or partial) of a national, ethnic or religious group *has* indeed happened again multiple times during the 20th Century (the same fate befalling the Armenians, the Khmers, the Tutsis and the Bosniak Muslims, for example). In the age when nuclear weapons are industrially produced and distributed, we must inevitably wonder about our ability to constantly monitor and control their use – particularly when we consider that they *have* indeed been deployed in war, not once but twice, regardless of the moral rectitude of that decision. We have suddenly been plunged into what is referred to as the '*end times*' – the clock is ticking, counting down until nuclear weapons are deployed once again. '*In "the end times" means in that age when, every day, we could bring about the end of the world. – "Definitively" means that, for all the time that is left to us, it will always be "the end times". No longer can another time come about: the end times will end only with our end*' (Anders, 2006: 116; Dijk, 2000).

In addition, by complexifying their organisation (industrial production, territorial administration, systematic globalisation of trade, etc.), our 'risk societies' are increasingly bringing about their own catastrophic situations. Catastrophes arise through the cumulative effect of all our social practices (consumption, transport, interconnection, acceleration, etc.), and affect all individuals (risk individualisation) (Beck, 1992).

Finally, when the ecological tipping points are passed (in terms of climate, biodiversity, disruption of the nitrogen and phosphorus cycles – Rockström, 2009), it causes irreversible imbalances, with multiple consequences for human society (climate migration, economic pressure, etc.), as well as for ecosystems and living species. Reports from international experts (IPCC, IPBES) regularly confirm the disastrous prospects we face. Nowadays, catastrophes arise from the cumulative effects of ecological, social (mainly rampant inequality) and technological threats.

Such ‘transcendental harm’ (Bourg, 2013) is testimony to the runaway consequences of today’s catastrophic situations. No longer can we speak merely of *risks* (which are hypothetical, accidental, and refer to one-off events), but of *threats*. Such threats are characterised by their unpredictability, systemic nature, global extent, repeatability (for example, consider the Chernobyl and Fukushima disasters), but above all, their irreversibility. In addition, the problems we face require very long-term management. Thus, the dangers with which we are now confronted spark an unprecedented form of violence (where there is no discernible enemy, as is the case with runaway climate change), and a multifaceted threat (in the interconnections that form between the various types of threat). In addition, they are beyond our ability to comprehend: these dangers – be it the nuclear threat, the climate crisis or the devastating loss of biodiversity – are of ‘unimaginable dimensions’ (Welzer, 2017).

Various approaches have been put forward to address such imbalances. One is to improve technical means of risk management, in order to minimise the effects of any failing (broadening bureaucratic prerogative, particularly in terms of security measures; extending technical experts’ freedom to take action; risk management; etc.). It is a matter of regulating uncertainty by reducing the scope for it. Another approach is to increase human interaction with the living world, to limit the risks (geo-engineering, transhumanism, etc.). Finally, there is a trend toward developing a strategy to adapt to these threats; such adaptation would require a shift in how we envisage the future of human society, and even our own place in the world. Hans Jonas (1985) proposes that we should develop an ‘ethic of responsibility’ that is compatible with our technophilic civilisation. He sets out an ethical framework of responsibility, which would preserve an *authentically human identity*, and affirm the responsibility we bear for our shared future. This involves early management of the potential risk posed by technical innovations, on the basis of advances in scientific knowledge; we must examine the conditions in which new technologies should be used, and whether they can be useful from a social and ecological standpoint. Jean-Pierre Dupuy (2015) proposes to increase the ontological weight of catastrophes (what he terms ‘enlightened catastrophism’). In so doing, we should be able to more fully understand the likelihood of their occurring, and thus make provisions for these eventualities as we move towards the future. Making people aware of an impending catastrophe ought to lead to a change in behaviour.

However, the implementation of these logical proposals is hampered by denial, minimisation, avoidance and inertia in decision-making, and in our perceptions of catastrophes. There is still too wide a chasm between the way in which we perceive catastrophe and our appreciation of how likely it is to occur.

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Bibliography

- Anders G., *La menace nucléaire. Considérations radicales sur l'âge atomique*, Paris, Le Serpent à Plumes, [1972] 2006
- Arendt H., *Eichmann in Jerusalem: A Report on the Banality of Evil*, New York, The Viking Press, 1963
- Beck U., *Risk Society: Towards a New Modernity*, SAGE Publications Ltd, 1992
- Bourg D., "Dommages transcendants", in Bourg D., Joly Pierre-Benoit, Kaufmann Alain, *Du risque à la menace. Penser la catastrophe*, Paris, PUF, 2013
- Dijk Paul van, *Anthropology in the Age of Technology, The Philosophical Contribution of Günther Anders*, Amsterdam: Brill, 2000
- Dupuy J.-P., *A Short Treatise on the Metaphysics of Tsunamis (Studies in Violence, Mimesis & Culture)*, Michigan State University Press, 2015
- Jonas H., *The Imperative of Responsibility: In Search of an Ethics for the Technological Age*, University of Chicago Press, 1985
- Rockström J. et al., "Planetary Boundaries: Exploring the Safe Operating Space for Humanity", *Ecology and Society*, 14(2): 32, 2009, p. 472-475
- Welzer H., *Climate Wars: What People Will Be Killed For in the 21st Century*, Polity, 2017

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