Liliana DOGANOVA, *Discounting the Future: The Ascendancy of a Political Technology* (New york, Zone books, Near future series, 2024, 330 p.)

Scholars of climate governance have long expressed their frustration with the principle of discounting, which implies a form of redistribution by which the value of a good in the future is considered to be lower than its value in the present. At the origin of this idea was an early capitalist idea of scarcity—to abstain from immediate consumption of, say, wood and timber was costly in the present, and in the same manner, in contemporary development economics, it is habitually presumed that poor people would find it an exorbitant price to pay for future stability if they were to leave economic resources to future generations while they themselves were starving. In the context of climate models, discounting leads to grotesque results: it means that we value the costs of natural resources such as air and water as lower for those who will live in the future than they are for us, so that in effect our present consumption takes precedence over theirs. The consumption of future generations is thus arbitrarily discounted by 4, 8, or 11 percent—numbers that are opaque and mysterious. In the real-life situation of environmental degradation, the value of future resources will surely increase as they grow scarcer, and so discounting seems at odds with an alternative principle by which the future price reflects our careless overuse in the present. From this viewpoint, discounting appears as one of many technologies that manipulate and distort our capacity to build a future-oriented economics in which price reflects actual use value (as suggested in the recent book by political economist Brett Christophers, *The Price Is Wrong* (Verso).

Discounting is, of course, not the only ill-conceived economic principle to have gained monumental influence in the budgeting and accounting systems of the contemporary capitalist world. It's nevertheless particularly difficult to understand the mind-boggling technology of discounting, and the many curious uses to which this technology seems to have been put over time. In many works of environmental politics, discounting is merely mentioned as a bad word, a black box of economic doxa. Liliana Doganova's exceptional book, *Discounting the Future: The Ascendancy of a Political Technology*, is an urgent corrective to this. Doganova's book is the result of a wide ranging research project that takes in critical accounting, STS, and intellectual history to consider the

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history of discounting. It turns out that as a cameral principle, discounting has an astonishing reach across space and time, its applications ranging from forest management in imperial Germany to Chilean coal mines and the global pharmaceutical industry. Doganova does not study discounting in the realm of climate governance. This seems at first to be an omission, but is explained in a fascinating final chapter which suggests that discounting could be put to use in innovative ways that might help us appreciate our natural world instead of depreciating it. This last chapter is not a conclusion as such, but a "sketch of a program", and Doganova has entitled it "The Ministry of the Future". Let us begin with this ending, and then consider the historic cases Doganova uses to illustrate what discounting can and cannot do.

The Ministry for the Future is a well-known work of science fiction by the novelist Kim Stanley Robinson. Doganova cites a dialogue between the book's fictitious minister for the global future, Mary, and her chief climate economist, Dick.

Mary: But this gets applied to other things?

Dick: Oh yes. That's economics. Since everything can be converted to its money value, when you need to rate the future value of an action, to decide whether to pay it now or not, you speak of that value using a discount rate.

Mary: But those future people will be as real as you and I. Why discount them in the same way that you do money?

Dick: It's partly to decide what to do…

Mary: So given that, how do you pick a discount rate?

Dick: Out of a hat…

The dialogue illustrates the fact that discounting seems at the same time to be both principled and random. Its purpose, Doganova explains, is to help decision makers and investors make decisions in conditions of Knightian uncertainty by evaluating certain situations in the future vis-à-vis situations in the present. Thus, discounting is both an innocuous statistical tool and a deeply performative engine that illuminates whether a future problem is relevant or not, and if so, to the value of what capital sum. Indeed, a central point for Doganova is that discounting could be performed purposefully to place a value on future life, but for this to happen would take something like a revolution in economic thinking. In the novel, this revolution happens, although it is aided by the presence of not only an entirely new global infrastructure but also significant new methods of geoengineering and several large-scale

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terrorist attacks. Discounting is reinvented by India after a devastating heatwave kills millions. While the "Children of Kali" kidnap and reeducate the global elite at Davos, and the Indian air force creates artificial clouds, the budget ministry turns discount rates around to resemble a bell curve, with the present at the top. As discount rates drop over future time, the discriminative cost of doing something in or for the future also drops. The present becomes expensive.

Doganova's case studies are meant to illustrate that discounting is as far from neutrality and objectivity as any other budgetary tool; instead, it is a technology that allows us to act on the relationship between present and future time. For this reason, she views discounting as not, strictly speaking, a tool of accounting, but a political technology used to deal with the many possible futures of the present and make an informed choice between them. Here, her work is inscribed not only in critical accounting and valuation studies, a field that she pioneered together with Fabian Muniesa, but also in the "new history of the future", a slightly awkward label for a number of works located somewhere between sociology and intellectual history that have argued that we need to start viewing the future less as an empty or "open" temporal horizon, marked by fundamental uncertainty, and more as a battleground that has already been colonized by various forms of action and inaction [see Andersson and Kemp 2021].[1] Beckert has suggested [2016][2] that capitalism is futurist, in the sense that it constantly acts on and for the future. Financialization studies have long emphasized that financialization is inherently about the future, and recent works on capital have also underscored that capital is a temporal logic [Levy 2017].[3] Doganova brings these arguments further by picking up on the following point: if we have situations of profound uncertainty—which, granted, we do—then why do we privilege certain forms of risk over others? For instance, why do we prefer extinction to, say, inflation? Why do we prefer the future of capitalist stabilization and status quo over the future of transformative change?

Evidently, discounting does not hold the whole answer to this question, but Doganova's analysis adds to our understanding of how the selection process involved in the making of human futures takes place.

[1] Jenny Andersson and Sandra Kemp, 2021. *Futures. A critical reader* (Oxford, Oxford University Press).

[2] Jens Beckert, 2016, *Imagined futures. Fictional expectations and capitalist dynamics* (Cambridge MA, Harvard University Press).

[3] Jonah Levy, 2017, "Capital as process and the history of capitalism", *Business History Review*, 91 (3): 483–510.

Discounting is a tool of power that is mainly placed in the hands of global elites; if placed in the hands of others, it could perhaps do different things.

Doganova's first empirical case study explains how discounting came about as a political technology defined by a mercantilist need to husband forestry resources for the present and future of the state. This took place in imperial Germany, in a story that is to some extent already known; but Doganova explains that through the debates of French philosophers on forestry in the work on the *Encyclopédie*, there came an idea of the "optimum point" at which to fell trees so as to maximize the forest's productivity. Trees left to grow beyond this point would start to decline: in other words, their discount rate would increase. This observation posed a double-edged problem: first, it was of obvious interest that forests should endure into the future, hence securing what in large parts of Europe was in the interest of the Crown. The future existence of the state thus entered into conflict with the need for firewood on the part of the living. Second, forestry introduced problems between the public and the consumer, because the public interest in longevity was opposed to the consumer interest in survival. Discount rates were intended to reflect a careful balance between these principles.

In Doganova's second case study, so-called discounted cash flow analysis (or DCF) is analyzed as a management tool that spread and was circulated through various management studies textbooks. The argument is that whereas discounting, in the previous case, turned forests into capital, DCF turns the investor-figure into a fundamental arbiter of the future through their constant pursuit of future value. DCF is a way of estimating cash flow by speculating on the future returns on capital, and in Doganova's account, it creates a kind of mystical world in which investors act on adjusted knowledge of capital flows while disregarding questions that are—as it were—of real value to living beings. This is a complex argument, which forces Doganova to explain how discounted value, in fact, more or less constantly comes into conflict with the living population, both in the present and the future. DCF is a particularly valued tool, it seems, in industries that continually perform this kind of valuation, especially pharmaceuticals. Pharmaceutical giant Eli Lilly uses DCF to make judgments on which drug trials to pursue—those testing a new kind of insulin, or a high-risk, small-population target therapy for certain cancers? It is not in any way surprising that pharmaceutical industries use cost–benefit analysis for these kinds of decisions, but Doganova argues that they do so with the investor, not the patient population, in mind. From this perspective, future populations disappear from the picture—leaving us with the question of how, for instance, such principles change in publicly funded systems or in crisis situations such as the Covid pandemic. In Doganova's third example, discounting is studied in the context of 1970s Chile. The socialist Allende regime nationalized the copper mines and paid nothing for them, while the ensuing right-wing dictatorship handed the mines back (through concessions) to multinational companies while setting discount rates that reflected the amount of future benefits that the mines would generate. Allende's decision was based on a past of exploitation—he felt the industry had already made its profits on a common good, and needed no further compensation. The new mining law instituted in 1980 by Pinochet's mining minister—Chicago Boy José Pinera—was based on an idea called present value, by which the state retained legal ownership of the mines but granted multinational companies the right to estimate their future cash flows. This is evidently a form of privatization, and the global uses of the principle of the future cash flow are astonishing. Principles of future value been used to settle issues between independent nations and multinationals in several instances since 1970, for instance in Iran.

Doganova's case studies are dense and not always easy to follow, and if any criticism at all can be made of this breathtaking book, it's that the framing of discounting as an example is narrowly constructed in relation to the fields of STS and valuation studies, at the expense of a larger reading in, say, economic history, colonial studies, or sociology of the future. The book's focus on the practice of discounting the future contains only a beginning, not a fully fledged reflection on just how we deal with the future in modern capitalist societies. A broader lens could have helped here. Discounting is not the only political technology that discards the future. Certain forms of forecasting, scenarios, and even budgeting also perform this task, and there are reasons why such technologies proliferate in late capitalism. Forecasts, I have suggested, should be viewed in the context of capitalist relationships that grew to extend time and space relations in dramatically altered ways in the 20th century —for instance in the modern oil company. It was the oil companies that pioneered forms of prospection into time, just as they had pioneered geological prospecting. This had to do with properties of oil and peak oil, certainly, but also with the structure of multinational companies, which straddle time and space relationships and have done so since they inherited imperial structures. Scenario planning, a tool that is widely used today in thinking about the capitalist future, originated in the nuclear field.

Additionally, these technologies, in my view, are preeminently political technologies and forms of statecraft that privilege the interests of

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those currently living. They are also performative [Andersson 2020],[4] and like discounting, can be put to use in innovative ways. There is a world of difference between the scenarios performed by marginalized groups and scenarios performed at Davos.

While the argument that discounting mediates between those living in the present and future populations in ways that are, mainly, detrimental to the latter is a very important one, this argument would have come off as stronger in the context of a wider reflection on the ways of engaging with (or rather, not engaging with) the future that financial capitalism produces. It would be helpful to the world if we could put into words which social contexts or which epistemological demands might make these technologies helpful, as opposed to detrimental, which is of course exactly what a final chapter called "The Ministry of the Future" leads us to expect. There is a slight sense of something missing here—is the answer, perhaps, clearer rules on transparency and rate setting? Legal frameworks to protect the intrinsic value of future beings? More interactive processes in which the investor-figure is challenged by other forms of agent, or a radical reinvention of the theoretical notion of value as *capital*? And if discounting—as, in the end, Doganova suggests—can help reassess the process of capitalist valuation, then what precisely do we need to ask of discounting in order to reach a new kind of valuation and, I guess, capitalism? How do we stop discounting the future?

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[4] Jenny Andersson, 2020. "Ghost in a shell: The scenario tool and the world making of Royal Dutch Shell", *Business History Review*, 94 (4): 729–751.

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