https://doi.org/10.1017/S0265052523000432 Published online by Cambridge University Press

FREEDOM, POVERTY, AND IMPACT REWARDS

By Thomas Pogge*

Abstract: *A free world is one in which human beings can live free, self-directed lives. A great obstacle to such a world is severe poverty, still blighting the lives of half of humankind. We have the resources, technologies, and administrative capacities to eradicate severe poverty, but doing so requires some restructuring of existing social arrangements. We might begin with the current regime governing innovation, which has monopoly markups as its key funding source. Such monopoly rents encourage the quest for innovations, but also greatly impede their diffusion. This headwind harms the poor, who cannot afford monopoly prices and whose specific needs innovators thus tend to ignore. It also works against potential innovations whose benefits would mostly go to third parties whom buyers care little about. Both problems can be much alleviated through a supplementary alternative reward mechanism that would enable innovators to exchange their monopoly privileges on any patentable technology for impact rewards based on the social benefits achieved with it. By promoting innovations and their diffusion together, international impact funds would bring substantial gains in justice and cost-effectiveness, especially in the pharmaceutical and green-technology sectors.*

KEY WORDS: Adam Smith, diffusion, freedom, green technologies, health, impact funds, incentives, innovation, monopoly rents, pandemic, patents, pharmaceuticals, poverty, progress

I. Freedom

Freedom is a widely shared aspiration and value: human beings ought to live free. In first approximation, this means that people ought to have meaningful options to choose from. These include immediate conduct options (freedom of movement, of worship, of speech, and of expression), options for directing one's life (freedom of association and choice of profession, religion, and place to live), and options to shape one's environment (formative freedom).

Wanting human beings to have meaningful options does not entail indifference to what they choose. On the contrary, it entails the desire that people choose responsibly, mindful of the impact their choices will have on their own future freedom and that of others. Most of our choices may have little or no such impact. Sometimes, though, the impact is profound, especially in

* Philosophy Department and Global Justice Program, Yale University, thomas.pogge@yale.edu. Competing Interests: The author declares none.

doi:10.1017/S0265052523000432

© 2024 Social Philosophy & Policy Foundation. Printed in the USA. This is an Open Access article, distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives licence (https://creativecommons.org/licenses/by-nc-nd/4.0/), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is unaltered and is properly cited. The written permission of Cambridge University Press must be obtained for commercial re-use or in order to create a derivative work.

https://doi.org/10.1017/S0265052523000432 Published online by Cambridge University Press

exercises of formative freedom: when we take part, with others, in shaping our shared environment and lifeworld.

For freedom to thrive, to be widely enjoyed, it must be socially constrained and regulated. Freedom is subject to interpersonal conflict and competition as one person's exercise of her freedom may curtail the freedom of others. If such conflicts remain unregulated, then most end up with little freedom, in something like a Hobbesian state of nature where they experience "continual fear, and danger of violent death; and the life of man, solitary, poor, nasty, brutish, and short."[1] Valuing human freedom, we ought therefore to support its limitation through social rules and other arrangements.

We should also contribute to shaping such social arrangements so that they create and sustain a rich space of options. Well-structured human societies generate a great wealth of opportunities that would not exist in their absence. Most citizens of an advanced modern society enjoy more freedom than even the strongest person in a Hobbesian state of nature who can fend off any attempts by others to interfere with his freedom. Substantial restraints on our freedom are offset not only by the greater safety we enjoy by similar restraints being placed on others, but also, more importantly, by the rich diversity of socially created opportunities that modern society gives rise to.

There are many very different ways of structuring the collective life of human beings. Committed to freedom, we might assess these alternatives in terms of how much freedom human beings would enjoy under each. While such judgments raise difficult questions about the valuation and aggregation of diverse freedom increments, we can still draw some broad conclusions. For example, violence should be severely restricted as the gain in freedom by those who inflict it is typically much smaller than the loss in freedom by those on whom it is inflicted. For parallel reasons, freedom of association should be conditional on consent: one person's freedom to associate with another should give way to the other's freedom to decline this association.

The social arrangements or structures here referred to might be grouped into four interdependent components:

- The institutional order, centrally including the legally codified rules and practices of politics, family, work, commerce, finance, education, and health care.
- The social and cultural practices, customs, and habits about production, consumption, waste disposal, and so on, which, even if not codified in law, profoundly affect human lives, as illustrated by the historically most important examples of racism, sexism, and religious discrimination.[2]

[1] Thomas Hobbes, *Leviathan* (Harmondsworth, UK: Penguin, 1981), 186.

[2] A U.S. example is the practice of co-locating polluting infrastructure with residential areas inhabited by people of color. The correlation persists to this day. See Haley M. Lane et al., "Historical Redlining Is Associated with Present-Day Air Pollution Disparities in U.S. Cities," *Environmental Science & Technology Letters* 9, no. 4 (2022): 345–50.

- The existing infrastructure, including roads, railways, shipping lanes, canals, bridges, tunnels, dams, airports, factories, power and sewage plants, businesses, warehouses, shops, schools, hospitals, prisons, cables, pipelines, and communication channels for news, social media, and personal interactions.
- The physical environment as shaped and continuously changed by how humans interact with it through settlements, agriculture, mining, sewage, landfills, emissions, and formative uses of forests, meadows, lakes, rivers, coasts, parks, mountain ranges, and the like.

These structural features have profound effects on human freedom, on the distribution of most other goods and ills, even on persons' character, personality, and ambitions. How we shape these features—the problem of social justice—is therefore of great moral importance.

This *how* covers two distinct questions, one about design *processes* and the other about design *outcomes*. The value of freedom supports the demands that human beings ought to have formative freedom to participate in structuring their lifeworld and that they ought to structure this lifeworld so that this formative freedom is preserved, so that human beings—protected against deprivation, stress, and oppression—have a wide variety of attractive conduct options and choices about how to lead their lives. The latter demand means that the exercise of formative freedom is a matter of imperfect procedural justice; when legitimately participating in shaping social structures, we ought to exert our influence toward ensuring that these structures are shaped to support and sustain human freedom.

Liberal design processes may lead to illiberal outcomes and may even erode the liberal character of those design processes themselves. In such cases, one can either endorse the outcome because it was freely adopted or reject the outcome because of its adverse effects on human freedom. This choice is especially important when legitimate design decisions modify the design process itself so as to diminish the formative freedom of some to play a meaningful role in shaping their shared lifeworld. This happens when people freely institute arrangements—an institution of slavery, for example—that lead to some losing any meaningful role in shaping their common lifeworld. Some libertarian authors appeal to freedom to endorse such reforms, invoking pure procedural justice to recursively justify any structure that emerges from a free initial condition through a sequence of freely chosen transitions.[3] The liberal tradition, by contrast, prioritizes preservation of human freedom, rejecting as unfree a society practicing slavery, even if a majority has supported its introduction and even if all slaves became enslaved by their own free decision. The liberal tradition likewise rejects a society ruled by a dictator, even if some free democratic

[3] Nozick's endorsement of slavery is an example. See Robert Nozick, *Anarchy, State, and Utopia* (New York: Basic Books, 1974), 331.

https://doi.org/10.1017/S0265052523000432 Published online by Cambridge University Press

process produced the decision to transfer the people's formative powers to a Führer.

According to liberalism, human beings ought to live free and, for judging how free they are, the conditions under which they now live, their real options and opportunities, are of paramount importance. Prior free formative decisions can result in, but cannot justify, unfree conditions.

II. Poverty

By far the greatest freedom deficits are linked to poverty. This is true nationally, even in richer countries, and especially globally. Those who must struggle and fear each day about feeding their families are exposed to deprivation, stress, and oppression and have deficient opportunities to shape their own life and to participate in structuring their lifeworld.

Early in the era of United States dominance, President Franklin Roosevelt—in his famous Four Freedoms speech of January 6, 1941—touched on this point when he proposed liberalism as a sharable aspiration for the whole world:

> In the future days, which we seek to make secure, we look forward to a world founded upon four essential human freedoms. The first is freedom of speech and expression—everywhere in the world. The second is freedom of every person to worship God in his own way—everywhere in the world. The third is freedom from want—which, translated into world terms, means economic understandings which will secure to every nation a healthy peacetime life for its inhabitants—everywhere in the world. The fourth is freedom from fear—which, translated into world terms, means a world-wide reduction of armaments to such a point and in such a thorough fashion that no nation will be in a position to commit an act of physical aggression against any neighbor—anywhere in the world.[4]

Roosevelt here identifies poverty as a threat to freedom and commits the United States to building a post-war world in which all human beings will enjoy freedom from want. His view makes good sense. Poverty can be understood as a condition of persons and groups who lack secure access to essentials for a worthwhile life, such as nutrition, shelter, clean air and water, education, health care, leisure time, and freedom from violence. This understanding suggests that freedom from poverty is *satiable* (fully attainable), *scalar* (a matter of degree), and *multidimensional* (dependent on diverse essentials). At least the first two suggestions accord with common sense: some people are poorer than others and some are not poor at all.

[4] U.S. National Archives, "President Franklin Roosevelt's Annual Message (Four Freedoms) to Congress (1941)," https://www.archives.gov/milestone-documents/president-franklin-roosevelts-annual-message-to-congress.

https://doi.org/10.1017/S0265052523000432 Published online by Cambridge University Press

This understanding of poverty makes clear that the connection Roosevelt draws between poverty and freedom is not a rhetorical trick that uses "freedom" to denote the absence of something bad, as in "freedom from robocalls." Poverty renders human beings seriously unfree in the three components of freedom we have distinguished: it diminishes one's conduct options, one's freedom to direct one's own life, and one's formative freedom to shape, with others, the lifeworld one inhabits. Poor people lack many options and opportunities that affluent people have and can generally exert much less influence on their shared socially shaped environment.

These points are made vivid by looking at the state of poverty some eighty years after Roosevelt's memorable speech. In 2021, 42.2 percent of humanity —3.14 billion people—were reportedly unable to afford a healthy diet costing $3.66 per person per day in the United States.[5] They had, in 2021, less purchasing power per person per day than $5.82 in the United States,[6] as compared with an (also purchasing-power-adjusted) 2021 gross world product of about $59.39 per person per day.[7] This comparison strongly suggests that, given sufficient political will, our world economy could be structured so that all, or nearly all, human beings have access to a healthy diet. This was Roosevelt's vision and commitment on behalf of the United States. It was incorporated into the 1948 *Universal Declaration of Human Rights* (Articles 25 and 28) and became legally binding on states that ratified the 1966 *International Covenant on Social, Economic and Cultural Rights* (Article 11). It was reiterated in the *Universal Declaration on the Eradication of Hunger and Malnutrition*, adopted at the 1974 World Food Conference in Rome, and then again in the *Rome Declaration*, adopted at the 1996 World Food Summit. It was renewed in the *Millennium Declaration* of the year 2000 (Article 19) and the *Millennium Development Goals* of the same year (Goal 2). Its most recent restatement appears in the 2015 *Sustainable Development Goals* (SDGs), which promise (Goal 2) food security for all by 2030.

It is true that there has been progress against poverty, mainly in Asia and especially in China. Yet, as we approach the halftime mark of the SDG period, it is reported that the number of food-insecure people has *increased* by a staggering 46 percent (from 1.612 to 2.357 million) between 2015 and 2022.[8] The poorer half have been left behind by a structuring of the world economy that perpetuates their severe poverty. They are denied a life in

[5] FAO, IFAD, UNICEF, WFP, and WHO, *The State of Food Security and Nutrition in the World 2023: Urbanization, Agrifood Systems Transformation, and Healthy Diets across the Rural-Urban Continuum* (Rome: UN Food and Agriculture Organization, 2023), 27 (Table 5), https://doi.org/10.4060/cc3017en.

[6] The United Nations Food and Agriculture Organization (FAO) presumes a healthy diet to be affordable just in case it costs no more than 63 percent of a household's income. See FAO, IFAD, UNICEF, WFP, and WHO, *The State of Food Security and Nutrition in the World 2021: Transforming Food Systems for Food Security, Improved Nutrition, and Affordable Healthy Diets for All* (Rome: UN Food and Agriculture Organization, 2021), 173, https://doi.org/10.4060/cb4474en.

[7] See "GDP per Capita, PPP—Country Rankings," *The Global Economy*, https://www.theglobaleconomy.com/rankings/gdp_per_capita_ppp/.

[8] FAO et al., *The State of Food Security and Nutrition in the World 2023*, 21 (Table 4).

https://doi.org/10.1017/S0265052523000432 Published online by Cambridge University Press

freedom. They suffer deprivation, stress, and oppression; their life choices and conduct options are tightly constrained; and they have, at best, limited opportunities to play a formative role in structuring their lifeworld and environment.

The global average income has expanded by a factor of 4.4 since 1950[9] and nearly half of all human beings now fall below one-tenth of the global average income. These facts strongly suggest that our world could be restructured in ways that would greatly reduce, if not eradicate, severe poverty. We ought to explore this possibility by thinking holistically about the four interdependent components distinguished above: institutional arrangements, social and cultural practices, infrastructure, and natural environment. By gradually modifying these structural features, we could greatly reduce poverty and consequent unfreedom. Doing so might also boost human progress, seeing that poverty is associated with low education, poor health, and hence reduced productivity. The structural eradication of poverty would enable many more people to make substantial economic, social, cultural, and political contributions to their society and humankind.

One might object that widespread lack of freedom must be accepted because the structures sustaining it have resulted from freely made structuring decisions—at least by rich and powerful states, corporations, and individuals. This defense of the status quo is unconvincing.

One problem is the independent importance of design outcomes. As we saw, the liberal tradition generally privileges outcome over process: rejecting slavery and dictatorship, even if they were chosen by a majority and even if each slave had once consented to his own enslavement. What matters is how alternative structuring decisions would affect the freedom of conduct and the formative freedom of all affected. Liberals are opposed to anyone using her formative freedom in ways that undermine or even destroy the legitimate freedom of others (or her own future freedom). This line of reasoning extends to severe poverty; it should be structurally avoided, insofar as reasonably possible, because it severely constrains freedom of action, freedom to lead one's own life, and freedom to participate in shaping one's environment.

Even if poverty is sometimes deserved on account of improvidence or lack of effort, severe poverty should still be avoided because of its adverse effects on innocent parties, especially children, whose lives may be blighted by deprivations suffered during their early years, and also the public, which is harmed when poverty reduces persons' productivity to the detriment of all.

Another problem with the procedural defense is that it invokes an elite's really existing formative freedom that, according to the critique, should never have been so excessive. Participation in shaping the human world is, crudely put, a constant-sum game. If some play a dominant role, then

[9] Max Roser et al., "Economic Growth," Our World in Data, https://ourworldindata.org/economic-growth.

https://doi.org/10.1017/S0265052523000432 Published online by Cambridge University Press

https://doi.org/10.1017/S0265052523000432 Published online by Cambridge University Press

others must be confined to a less-than-equal role. One might think that this freedom deficit of the marginalized is fully compensated by a freedom surplus of the privileged, but two thoughts oppose this opinion. One invokes the diminishing marginal value of freedom, as being able to participate meaningfully at all is of much greater importance than being able to do so to an above-average degree. The other invokes the principle of universalizability, formulated by Immanuel Kant[10] and others, which denies moral value to freedom that is incompatible with a like freedom enjoyed by others. One might add that the violence of colonialism, slavery, and genocide played a key role in the emergence of the dominance in formative freedom of those who shaped existing structures. This violent history makes it difficult even for libertarians to argue that existing structures have a moral standing that immunizes them against freedom-enhancing structural reforms.

Some such reforms may derive further support from the fact that most people would favor them. To be sure, the minority who today enjoys a great preponderance of formative freedom is mostly content with the existing structures. However, in view of the large number who cannot even afford a healthy diet, we can safely assume that a majority of humanity wills alternative structures under which such severe poverty would be much reduced and people in the poorer half would have much greater freedom of action and formative participation. The structuring of the one world in which we all live cannot conform to the will of both sides. The value of freedom would, in such a conflict, favor that our world conform to the will and judgment of the majority, especially since the high concentration of formative freedom in the minority is both excessive and historically suspect. The minority is not morally entitled to the hugely disproportionate formative freedom it has been using to impose and maintain the present global order.

We now have three indications that the current structuring of our world, by denying the poorer half of humanity even that small fraction of the global average income necessary to escape severe deprivation, is objectionable from a liberal standpoint:

- It deprives the poor of their formative freedom to participate in shaping their lifeworld.
- It leaves most human beings little freedom of action, making it difficult for them to liberate themselves from deprivation, stress, and oppression, and offers them no attractive opportunities to shape their own life.
- It does not correspond to the will and judgment of the currently marginalized, who aspire to a greater—ultimately, an equal—formative role in structuring our world and to greater freedom of life and action. There is moral value in one's lifeworld being consistent

[10] Immanuel Kant, *Groundwork of the Metaphysics of Morals* (Cambridge, UK: Cambridge University Press, 2012), chap. 2.

> with one's will and judgment, in it being structured as one wills it to be and judges it right.[11]

All three points relate, in different ways, to equality, but this is not some independent principle of equality to be weighed against the demand for freedom. Rather, the idea is that everyone's freedom has value and ought to be weighed equally in structuring decisions—the freedom of women no less than that of men, the freedom of workers no less than that of entrepreneurs, the freedom of Africans no less than that of Europeans.

Reflections on how to avoid structural poverty tend to focus on tax and social support schemes, which affect rather directly the distribution of the social product. They do this by determining what taxes people and firms pay on their consumption, income, profits, and so on, and what support is available to poor people in the form of free or subsidized goods and services, health insurance, income support, and the like. While tax and social support (and analogous international development assistance) schemes are explicitly geared to curb poverty and inequality, many other structural features of national societies and supranational systems have profound effects on poverty and inequality that, far from their rationale and purpose, are easily overlooked.

One important example is the use of our planet's natural resources on which the production of nearly all economic value depends. Under current structures, these resources are available for unilateral exploitation through the discharging of pollutants into atmosphere and oceans, for example, which causes vast uncompensated harms to others, especially children, whose lives will be blighted by the effects of air pollution[12] and climate change. To be sure, fossil-fuel taxes are now charged in some of the more affluent countries, but these revenues rarely benefit those harmed the most. The people of one state can still abuse the atmosphere and oceans at will for emissions and waste without compensating lower-income foreigners who barely cause any emissions and are typically suffering the most from unbearable tropical heat, more frequent extreme weather events, spreading tropical diseases, and increasing scarcity of food and water.[13]

[11] This value of being reconciled with one's social world is emphasized especially by G. W. F. Hegel as central to human freedom. See, e.g., the end of the preface to Georg Wilhelm Friedrich Hegel, *Elements of the Philosophy of Right* (Cambridge, UK: Cambridge University Press, 1991), 22–23.

[12] It is estimated that air pollution from fossil fuel combustion alone causes some 8.7 million premature deaths annually, accounting for about 15 percent of all human deaths. See Karn Vohra et al., "Global Mortality from Outdoor Fine Particle Pollution Generated by Fossil Fuel Combustion: Results from GEOS-Chem," *Environmental Research* 195 (2021).

[13] It is estimated that human beings in the poorer half, who suffer the most from the effects of climate change, account for about 7 percent of anthropogenic emissions, while the richest 10 percent account for about half, the richest 1 percent for about 15 percent, and the richest 0.1 percent for about 4.5 percent of all greenhouse gas emissions. See Helena Horton, "'Carbon Footprint Gap' between Rich and Poor Expanding, Study Finds," *The Guardian*, February 4, 2022, https://www.theguardian.com/environment/2022/feb/04/carbon-footprint-gap-between-rich-poor-expanding-study.

https://doi.org/10.1017/S0265052523000432 Published online by Cambridge University Press

Similar unilateralism prevails in the exploitation of mineral deposits. Anyone who can gain power in a country—even by force—is internationally recognized as entitled to create legally valid property rights in "his" country's natural resources and can thereby enrich himself and cement his rule while depriving his compatriots and all of humankind of any share in the value of the appropriated minerals. Such activities lead to massive devaluation of our planet: mineral deposits are depleted, the climate deteriorates, and air and water pollution endanger humans and all living beings. While in principle no one is barred from such destructive overexploitation, it is in fact only a small minority of wealthy people who have the freedom to participate in it.

A better arrangement would be at least to compensate poor people for this planetary loss of value by entitling them to some part of the privately appropriated or (by polluting emissions) depreciated value through a basic dividend. The resulting increased costs of exploitation would accelerate the urgently needed green transformation of the world economy. A basic dividend of just 2 percent of world product would go a long way toward eradicating the more severe forms and manifestations of poverty.[14] In particular, such a dividend could ensure that all human children have a decent start in life. Today, half of all children receive only a minimal education and some 160 million children between ages five and seventeen are engaged in wage labor outside their own households and thus do not go to school at all.[15] For these children, this entails a severe, lifelong loss of freedom; for the world, it means a gigantic loss of talent and creativity. This goes on even while the cost of worldwide primary and secondary education is probably much smaller than the forgone productivity gains for the world economy so that, overall, it would cost nothing to empower all children worldwide to enjoy the freedom to make meaningful choices about their life and conduct as well as the formative freedom to participate in shaping their lifeworld to the best of their ability, judgment, and will. The gain in freedom would be enormous, the (subjective and moral) loss in freedom at most minor.

More examples could be given concerning existing regimes governing international taxation, trade, investment, debt, and labor. In all these domains, current structures could be reformed to make them more resistant to poverty. The remainder of this essay focuses on the global innovation regime that is crucial for the pace, direction, and distribution of progress and development.

[14] Thomas Pogge, *World Poverty and Human Rights: Cosmopolitan Responsibilities and Reforms* (Cambridge, UK: Polity Press, 2008), chap. 8.

[15] International Labour Organization (ILO) and UNICEF, *Child Labor: Global Estimates 2020, Trends and the Road Forward* (Geneva: International Labour Organization and United Nations Children's Fund, 2021), https://www.ilo.org/ipec/Informationresources/WCMS_797515/lang--en.

https://doi.org/10.1017/S0265052523000432 Published online by Cambridge University Press

III. Progress

For most of history, a large majority of human beings were poor. That this is no longer so is due to spectacular human progress, especially during the past few centuries. While all living species evolve, only human beings make progress. We are genetically much like we were millennia ago; yet, we have gone from hunting and gathering to laser surgery, internet communications, and constitutional democracy. Through such progress, we have substantially reduced poverty and made all human poverty avoidable.

Such progress has two essential components: *innovation* and *diffusion.* We need creation, invention, and discovery; we also need such innovations to be learned, taken up, spread, and used to good effect. Such diffusion is morally important, as we ought not needlessly exclude anyone from the amazing knowledge, know-how, technology, and culture that humanity has accumulated. Dissemination is important also for innovation itself: only those who partake in human progress can build on it.

With progress so essential and beneficial to humanity, various ways of encouraging, preserving, and communicating innovations have emerged, from language and writing to libraries, universities, and intellectual property rights. Such progress in improving the flow of human progress may be the most important progress of all.

The rules and institutional arrangements governing innovation and its diffusion matter for poverty and its avoidance in two main ways: by eliciting relevant innovations that enhance human capacities and by influencing the distribution of access to innovative technologies and rising prosperity. Unequal access to technologies can greatly aggravate economic inequality, poverty, and oppression. Historically, it has often done so, as when superior weapons enabled conquest and enslavement. Innovation can also be harnessed, though, for the realization of that much-promised world free of poverty.[16]

Recognizing this great importance of innovation, liberals have called on states to establish governmental innovation incentives, particularly monopoly patents. Thus, Adam Smith writes:

> [T]he inventor of a new machine or any other invention has the exclusive priviledge [sic] of making and vending that invention for the space of 14 years by the law of this country, as a reward for his ingenuity, and it is probable that this is as equall an [sic] one as could be fallen upon. For if the legislature should appoint pecuniary rewards for the inventors of new machines, etc., they would hardly ever be so precisely proportiond [sic] to the merit of the invention as this is. For here, if the invention be good and such as is profitable to mankind, he will

[16] "Our Dream Is a World Free of Poverty" has been the World Bank's official motto, carved in stone at its Washington headquarter building. The expression is widely used by others with similar sincerity and impact.

https://doi.org/10.1017/S0265052523000432 Published online by Cambridge University Press

> probably make a fortune by it; but if it be of no value he also will reap no benefit.[17]

The patent regime Smith describes is still in operation, with a one-size-fits-all version globalized in 1995 through the Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement.[18] A key provision of TRIPS entitles innovators to a twenty-year product patent, which gives them a monopoly on the manufacture and sale of their innovation in the relevant jurisdiction (Articles 27, 28, and 33). Protected from competition, innovators can then sell their patented product at high markups or charge high royalties or licensing fees for rights to manufacture and sell it. Such monopoly rents allow them to recoup their up-front expenses for research and development (R&D), patenting, and pursuing regulatory approvals. These fixed costs of innovation are thus, in effect, paid for by those who buy innovative products while they are still under patent.

Smith is right that it makes sense to reward innovations according to their merit and to understand merit in terms of benefit to humankind. We should structure relevant institutional arrangements so that they selectively facilitate, encourage, and reward innovations that are socially valuable rather than pointless or even destructive. It is less evident that monopoly rents generated with patents are the best way to achieve such alignment. Monopoly markups impede the innovation's diffusion and thereby diminish its social value during its patent period.

Acutely aware of this adverse effect of monopolies, Smith characterizes patents as exceptional. He continues that patent privileges,

> as they can do no harm and may do some good, are not to be altogether condemned. But there are few so harmless. All monopolies in particular are extremely detrimental. The wealth of a state consists in the cheapness of provisions and all other necessaries and conveniences of life … . Its poverty again consists in the uncomeatibleness or difficulty with which the severall necessarys [sic] of life are procured. Now all monopolies evidently tend to promote the poverty or, which comes to the same thing, the uncomeatibleness of the thing so monopolized."[19]

A temporarily monopolized innovation is better than none at all, so it is in this sense "harmless." Yet, we should not be indifferent to forgone benefits, so we should seek to incentivize and reward innovative technologies so that they yield optimal social value. Innovations achieve progress only insofar as they are usefully deployed.

[17] Adam Smith, *Lectures on Jurisprudence*, ed. R. L. Meek, D. D. Raphael, and P. G. Stein (Oxford: Oxford University Press, 1978), 83.

[18] World Trade Organization, "Agreement on Trade-Related Aspects of Intellectual Property Rights," Annex 1C of the WTO's founding treaty, https://www.wto.org/english/docs_e/legal_e/27-trips_01_e.htm.

[19] Smith, *Lectures on Jurisprudence*, 83.

https://doi.org/10.1017/S0265052523000432 Published online by Cambridge University Press

Monopoly markups are effective incentives for developing innovations, but such markups also impede the diffusion of innovations by enlarging the gap between sales price and variable cost of supply. This gap produces deadweight losses, as many who would have bought the product at a competitive price will not buy it at a monopoly price. It would benefit both sides if these mutually advantageous sales could be consummated. But how? If the patentee sells to some at lower prices, then those prepared to pay the monopoly price will also seek to pay less, reducing innovator rewards and incentives and hence the flow of innovation.

Another way of supporting diffusion of patented innovations is to pay the patentee to waive its monopoly privileges, resulting in competition and hence a competitive price. Governments might offer such a buyout, but which patents should they offer to buy out? How much should they maximally offer for a given patent? Is it fair to make taxpayers support innovations that many have no use for, such as patented cosmetics or software programs?

These challenging questions have answers. Governments should buy out only patents on technologies whose deployment brings commensurate *public* benefits, for example, by reducing pollution, improving public health, raising the general level of education, or enhancing the nutritional value of foodstuffs. To support such innovations and their wider, more effective use, governments can justifiably use taxpayer money; they can also base payment on the social benefit achieved with each such innovation. The effectiveness of such an initiative can be enlarged by several states cooperating and preannouncing their long-term commitments. Together, states can create even stronger and more reliable incentives toward creating and diffusing innovations that can serve as valuable public goods.

As an add-on to the current innovation regime, consider international impact funds that would invite innovators to forgo monopoly markups in exchange for rewards based on social benefit. Each impact fund would cover a broad domain of innovation, for example, pharmaceutical innovations, rewarded according to their health impact; green-technology innovations, rewarded according to pollution averted; educational innovations, rewarded according to their impact on skills and employment; and agricultural innovations, rewarded according to their impact on harvest yield and reduced consumption of water, pesticides, or fertilizer. This metalevel innovation in how we encourage and reward innovations can be applied in any innovation domain definable through a uniform metric of social value.

Delinking a registered product's sales price from the fixed cost of R&D, impact funds would support diffusion in two ways: by removing the headwind of monopoly markups and by adding a tailwind of impact rewards. In contrast to earnings from patents, impact rewards are insensitive to socioeconomic position. The reward for averting pollution, disease, or premature death from a person is unaffected by what this person does, would, or could pay.

Impact funds transform innovator motivations. While monopoly rewards incite great efforts to find, stop, prevent, and deter patent

https://doi.org/10.1017/S0265052523000432 Published online by Cambridge University Press

infringements, impact rewards encourage innovators actively to promote the rapid, widespread, and effective deployment of their technology for optimal effect. Earning no share of its sales price, such innovators would nonetheless promote its effective deployment by providing technical assistance or even discounts, insofar as the increase in impact rewards earned from such promotional investments is expected to exceed their cost.

Any international impact fund would, in its specific domain, underwrite annual distributions, each split among registered innovations according to impact achieved in the preceding year. Suitable innovations could be registered with the appropriate impact fund and would then participate in a fixed number of consecutive annual payouts. With these rewards enabling registrants to recoup their R&D expenses and to make satisfactory profits, registrants would have to agree, in the included countries, either to waive their exclusive monopoly privileges or else to charge neither markups nor licensing fees during the reward period and then to waive any remaining monopoly privileges thereafter. An impact fund might be designed to require either of these concessions or else to leave the choice to each registering innovator.

Impact funds require long-term funding that, at least initially, might come from affluent states. A coalition of them could launch an impact fund with contributions tied to population and per capita income. With economic growth and accession of additional states, annual disbursements would grow, enabling the impact fund to attract a rising number of registrations. An impact fund might gradually become independent from states by building an endowment that welcomes contributions also from foundations, corporations, individuals, and bequests.

In allocating most of the fixed costs of innovation to more affluent countries, taxpayers, and donors, impact funds resemble the current monopoly regime. The big difference is that impact funds avoid excluding the poor. Such exclusion can be deeply immoral, as when so many patients cannot afford life-saving medicines that generic manufacturers stand ready to mass-produce and supply them cheaply. Such exclusion also harms us all. Monopoly markups on green technologies impede their adoption with the result that older, dirtier technologies ruin our planet and propagation of diseases among the poor endangers everyone's health.

Because participation is optional, an impact fund's reward rate emerges endogenously. When innovators find the going rate unattractive, registrations dry up and the reward rate rises as older innovations exit at the end of their reward period. When the reward rate is seen as generous, registrations multiply, and the reward rate declines. Such equilibration reassures participating innovators and contributors that the reward rate will be fair between them and stable.

Any impact fund would organize a wide competition across a whole domain of innovation, thereby creating a new kind of competitive market. It would train participating innovators to holistically organize their

https://doi.org/10.1017/S0265052523000432 Published online by Cambridge University Press

research, development, marketing, and delivery operations toward achieving the most cost-effective progress. Covering R&D costs and innovator profits as public goods, it would make access to registered innovations widely affordable at competitive prices, with registrants sometimes even subsidizing sales to motivate high-impact deployments.

Impact funds would further benefit lower-income populations by encouraging R&D that targets their specific needs. The capped sales price, supplemented with impact rewards, enables innovators to make good profits from selling to people who cannot pay high markups. This would attract innovator attention to neglected tropical diseases, cheap nutritious foodstuffs, reliable local energy generation, pollution-free cookstoves, and so on. In the competition to develop such advances, innovators from low-income countries would not face the usual crushing head start by innovator firms from wealthier (usually Northern) countries. Impact funds would therefore also help build, in lower-income countries, capacities in R&D, manufacturing, and deployment.

Another great advantage of impact funds is that they can take full account of externalities, such as a green technology's benefits for people other than its buyer or the reduced infection risk enjoyed by people other than the user of a new medicine. The current regime, by contrast, rewards patentees through user-focused decisions. Innovative activities therefore aim to generate benefits for users while largely ignoring both positive and negative externalities. This leads to substantial underinvestment in green innovations, whose benefits overwhelmingly go to distant strangers and future generations, and to substantial underinvestment in new pharmaceuticals that, by slashing the incidence of their contagious target disease, would bring large benefits to nonusers but would thereby also slash the innovator's future sales. Let us examine these two sectors more closely.

IV. Emissions and Diseases

Green technologies are made more expensive by monopoly markups. In the Global North, this competitive disadvantage is countered by environmental regulations, carbon taxes, and green subsidies. Such compensatory measures are largely absent in the Global South, as they would cause substantial capital outflows to Northern patentees. Consequently, existing green technologies are massively underutilized there, with devastating effects on air pollution[20] and climate. These adverse environmental effects are bound to grow much larger with economic development and population growth in the developing world.[21]

[20] Vohra et al., "Global Mortality from Outdoor Fine Particle Pollution."

[21] For example, sub-Saharan Africa's electricity production will rise dramatically as its *per capita* consumption—currently under 2 percent of the U.S. level—will catch up and its population will increase from the current 1.2 billion to about 4 billion by 2100.

https://doi.org/10.1017/S0265052523000432 Published online by Cambridge University Press

Coal-fired power plants provide a telling illustration. Frontier technologies can substantially reduce emissions but cost more because of license fees to patentees. Mitsui Babcock charged manufacturers of steam boilers about $1.5 million per 600 MW boiler for using its patented "ultra-supercritical" technology.[22] Consequently, many plants in India and other lower-income countries deployed less efficient subcritical or supercritical technologies[23] that will generate up to 30 percent higher emissions for decades.[24]

Rapid emissions reduction requires that highly effective and locally appropriate green technologies be widely and quickly deployed throughout the Global South. This could be achieved through an Ecological Impact Fund (EIF) that would invite innovators to accept payments based on emission reductions achieved with a new technology in lower-income countries (the EIF Zone) in exchange for waiving its monopoly privileges there.[25] The EIF would also expand innovation and delivery capacities in developing countries and accelerate the pace of green innovations, especially ones geared toward low-income populations and tropical regions.

The EIF could commence with annual distributions of $2 billion, divided among registered green innovations according to the emission reductions (assessed in tons of CO_2e) achieved with them in the EIF Zone in the preceding year. The funding should come from higher-income countries, who can best afford it and have contributed to and benefitted the most from historical emissions. By financing the EIF, these countries would go some way toward mending their broken promise to provide $100 billion annually to developing countries for climate mitigation and adaptation.[26] The EIF could be administered within the United Nations Framework Convention on Climate Change's Green Climate Fund.

New pharmaceuticals may sell at prices several thousand times their cost of manufacture. An example is sofosbuvir, an effective hepatitis C drug introduced in the U.S. in 2013 at $84,000 per course of treatment.[27] In lower-income countries, its sales price is much lower but still widely unaffordable on the also much lower incomes there. In its first five years, sofosbuvir had reached only five million patients worldwide; the other sixty-six million remain

[22] Xiaomei Tan et al., *Scaling Up Low-Carbon Technology Deployment: Lessons from China* (Washington, DC: World Resources Institute, 2010), 7, http://pdf.wri.org/scaling_up_low_carbon_technology_deployment.pdf.

[23] Ian Barnes, *The Prospect for HELE Power Plant Uptake in India* (London: IEA Clean Coal Centre, 2016), 4, https://usea.org/sites/default/files/The prospects for HELE power plant uptake in India - ccc271.pdf.

[24] Converting 35 percent rather than 45 percent of the coal's energy content into electricity. See Rosamund Pearce and Simon Evans, "Mapped: The World's Coal Power Plants," Carbon Brief, March 26, 2020, https://www.carbonbrief.org/mapped-worlds-coal-power-plants.

[25] The lower-income countries constituting the EIF Zone might be defined in terms of annual per capita income below $10,000. For more details, see Thomas Pogge, "An Ecological Impact Fund," *Green and Low-Carbon Economy* 1, no. 1 (2023): 15–21.

[26] Jocelyn Timperley, "The Broken $100-Billion Promise of Climate Finance—and How to Fix It," *Nature*, October 20, 2021, https://www.nature.com/articles/d41586-021-02846-3.

[27] Melissa Barber et al., "Price of a Hepatitis C Cure: Cost of Production and Current Prices for Direct-Acting Antivirals in 50 Countries," *Journal of Virus Eradication* 6, no. 3 (2020).

https://doi.org/10.1017/S0265052523000432 Published online by Cambridge University Press

infected and continue to spread the disease (to the patentee's benefit).[28] Millions of people suffer and die each year from lack of access to pharmaceuticals that competing generic firms could and would supply cheaply, if patent enforcement did not prevent them from doing so.[29] Besides, our practice of rewarding new pharmaceuticals with monopoly rents entails huge deadweight losses, much death and ill health among the poor, neglect of diseases of poverty, increased danger of pandemics, and burgeoning drug resistance, which often emerges in patients who cannot afford to take an expensive drug at full dosage for the full course of treatment.

Pharmaceutical innovation would be much more cost-effective if there existed a Health Impact Fund (HIF) enabling innovators to exchange their monopoly rents on a new pharmaceutical for impact rewards. Financed by willing states, those rewards could be paid through annual distributions, each divided according to health gains achieved with the registered pharmaceuticals in the preceding year. Each registered product would participate in ten consecutive distributions and then go generic.[30] The invited exchange should be valid worldwide, with the exception of noncontributing affluent countries where innovators could still sell their registered products at patent-protected high prices. This exception would give those countries an incentive to join the funding partnership. It would also lower the opportunity cost of registration and thereby depress the HIF's endogenous reward rate, making it cheaper for the HIF to attract a given portfolio of registrations. Thus, missing contributions from nonparticipating affluent countries would largely be offset by the HIF's lower cost, allowing an HIF with annual distributions large enough to support twenty to thirty products (with two to three entering and two to three exiting in a typical year) to be created even without support from some major higher-income states.

The HIF improves upon innovation prizes and other pull mechanisms, such as advance market commitments,[31] in five main ways. It constitutes a structural reform, establishing stable and predictable long-term innovation incentives. It lets innovators, who know their own capacities best, decide

[28] Clinton Health Access Initiative, "Hepatitis C Market Report" (2020), https://chai19.wpenginepowered.com/wp-content/uploads/2020/05/Hepatitis-C-Market-Report_Issue-1_Web.pdf.

[29] Arguably, cutting patients off from affordable access to life-saving drugs in this way constitutes a violation of their human rights. See Thomas Pogge, "The Health Impact Fund and Its Justification by Appeal to Human Rights," *Journal of Social Philosophy* 40, no. 4 (2009), 542–69.

[30] For details, see Thomas Pogge, "Just Rules for Innovative Pharmaceuticals," *Philosophies* 7, no. 4 (2022): 79–95.

[31] See Michael Kremer and Rachel Glennerster, *Strong Medicine: Creating Incentives for Pharmaceutical Research on Neglected Diseases* (Princeton, NJ: Princeton University Press, 2004); Médecins Sans Frontières Access Campaign, "Analysis and Critique of the Advance Market Commitment (AMC) for Pneumococcal Conjugate Vaccines (PCVs) and Impact on Access," MSF Briefing Document, 2020, https://msfaccess.org/sites/default/files/2020-06/Full-briefing-doc_Gavi-AMC-PCV-critique_MSF-AC.pdf; and Michael Kremer, Jonathan Levin, and Christopher M. Snyder, "Designing Advance Market Commitments for New Vaccines," 68, no. 7 (2022): 4786–814.

https://doi.org/10.1017/S0265052523000432 Published online by Cambridge University Press

which innovations to pursue across the whole range of disease areas. It avoids having to specify a precise "finish line," which is difficult to get right in advance, and instead rewards each registered innovation according to the benefits produced with its deployments. It avoids having to specify a reward-for-benefit rate, which instead evolves endogenously through market forces. It gives innovators strong incentives also to promote (through information, training, technical assistance, discounts, and so on) the fast, wide, effective diffusion of their registered innovations.

The HIF would create powerful new incentives to develop remedies against diseases concentrated among the poor; rapidly to provide these with ample care at very low prices; and to deploy them strategically to contain, suppress, and ideally to eradicate the target disease.[32] This makes the HIF an extremely cost-effective reform, potentially freeing hundreds of millions from their debilitating ailments[33] and greatly improving humanity's preparedness against the grave risks that communicable diseases pose due to evolving mutations and drug resistance. In fact, the HIF's true cost is likely to be markedly negative, insofar as savings on registered pharmaceuticals and other health-care costs as well as gains in economic productivity and associated tax revenues would directly benefit its funders—and also indirectly by reducing the cost of health insurance and foreign aid.

In addition, any impact fund would largely avoid wasteful expenditures triggered by monopolies. Such waste includes expenses for multiple staggered patenting in many jurisdictions with associated gaming efforts (such as evergreening), costs of preventing monopoly infringements, costs of mutually offsetting competitive promotion efforts, economic deadweight losses, and costs due to corrupt marketing practices and counterfeiting.

Thanks to large inefficiencies of monopolies, a shift toward impact rewards, in appropriate sectors, such as green technology and pharmaceuticals, can dramatically improve human lives and the well-being of our planet without cost to anyone. Making the business of innovation vastly more cost-effective, impact funds would produce a triple win: for innovators, for users of innovations, and for governments and taxpayers. Raising the social value of innovations developed, vastly extending their reach, and greatly reducing wasteful expenditures by patentees, impact funds could truly unshackle human progress and thereby promote human rights, poverty eradication, the 2030 Agenda of the Sustainable Development Goals, and a shared spirit of planetary solidarity.

[32] The monopoly regime gives the patentee the opposite incentive: *not* to decimate or eradicate its target disease.

[33] Pneumonia, diarrhea, tuberculosis, HIV/AIDS, malaria, and hepatitis still kill some seven million people each year. In addition, twenty so-called neglected tropical diseases "cause devastating health, social and economic consequences to more than one billion people." See World Health Organization, "Neglected Tropical Diseases," https://www.who.int/health-topics/neglected-tropical-diseases#tab=tab_1.

https://doi.org/10.1017/S0265052523000432 Published online by Cambridge University Press

https://doi.org/10.1017/S0265052523000432 Published online by Cambridge University Press

The green technology and pharmaceutical sectors afford suitable opportunities to pilot the impact fund idea. Such a pilot might involve a single reward pool of, say, $120 million. Innovators would be invited to submit proposals of how they might, with one of their existing technologies, achieve additional impact in some selected low-income country or region. An expert team would select the four best proposals based on, inter alia, anticipated incremental impact; equitable access; susceptibility to reliable, consistent, and inexpensive impact assessment; and promise of subsequent social value. Selected proponents would have two or three years for implementation. Achieved impacts would then be assessed, according to previously agreed-upon criteria, and the reward pool be divided proportionately. The pilot would show concretely how innovators respond to novel competitive impact rewards and how impact can be assessed in a reliable, timely manner. It would help refine impact assessment and show the cost-effectiveness of competitive impact rewards. With a successful pilot, an international agreement to establish the first impact fund would become a real possibility. In addition, the pilot would produce its own substantial impact and policy insights through the selected projects it monitors and rewards.

V. Pandemics

Making innovators depend on monopoly rents for their earnings tempts them in various ways to "put profits over people." Impact rewards are devised to better align profits with human needs, thereby making the business of innovation much more efficient and equitable in terms of research priorities and access to its fruits. With impact funds, innovators do well by doing good. A shift from monopoly rents toward impact rewards would expand profits from developing and delivering innovations while greatly magnifying their benefits.

The COVID-19 pandemic underscores the importance of better aligning incentives with social benefits. Before the next pandemic, there should be strong incentives to induce a rapid response, with powerful rewards for fast product development, manufacturing scale-up, and delivery.

As COVID-19 was spreading, people placed great hopes in pharmaceutical innovators playing a lead role in containing and suppressing the disease. This involved three, more specific hopes: that they would quickly develop effective vaccines or treatments, that they would organize rapid scaling up of manufacturing of new pharmaceuticals, and that they would then quickly get new products delivered around the world with a smart global strategy to minimize new infections and the emergence of new disease strains.

Imagine pharmaceutical firms that are single-mindedly focused on maximizing their profits while operating under the current innovation regime. How would they respond to a pandemic outbreak? Such firms would be

eager to fulfill our first hope: to get effective vaccines or treatments developed and approved quickly. They would then want to scale up manufacturing of their new product, but do so cautiously, as their profit depends not only on the sales volume, but also on the markup they can realize, which in turn depends on a favorable demand-supply imbalance. By rushing to scale up manufacture, pharmaceutical firms would undermine their own pricing power and might also risk building manufacturing capacity that will soon sit idle or losing proprietary skills and know-how to contract manufacturers.

Profit-maximizing firms would be even less inclined to fulfill our third hope. By participating in an effective population-level strategy of averting new infections and disease strains, they would stifle demand for their product, thereby diminishing both their future pricing power and their future sales volumes. By making their product affordable to lower-income countries and people, they might also provoke resistance against much higher prices in more affluent countries.

Our experience with the pandemic is close to what the above analysis suggests, putting the world, in the words of the WHO Director General, "on the brink of catastrophic moral failure."[34] Pharmaceutical firms did a great job in rapidly developing effective remedies, were slow in expanding manufacturing, and then directed limited supply to the highest bidders rather than to where it would contribute most to disease containment. Clearly, firms were seeking profit, even if they were not single-mindedly dedicated to this end alone.

Rather than draw grand conclusions about pharmaceutical enterprises or capitalist institutions, we should explore the more modest aim of better aligning innovation incentives with the public's shared interest in quickly containing and defeating any pandemic threat. Following the Health Impact Fund approach, pharmaceutical firms should be rewarded according to their contribution to reducing the overall disease burden attributable to the new pathogen.

A crucial objective here is to motivate firms to fully include poor people in a global population-level strategy. Such inclusion requires that an effective new pharmaceutical is cheap enough to be affordable to all and that delivering it even to the poorest is profitable enough for firms to want to do so comprehensively and effectively. In our world of widespread poverty, these two requirements stand in tension; there often is no sales price low enough to meet the former and high enough to meet the latter. To resolve this tension, firms should receive a delivery premium in addition to the sales price.

[34] World Health Organization, "WHO Director-General's opening remarks at 148th session of the Executive Board," https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-148th-session-of-the-executive-board.

https://doi.org/10.1017/S0265052523000432 Published online by Cambridge University Press

https://doi.org/10.1017/S0265052523000432 Published online by Cambridge University Press

Unrelated to the economic position of the person or country served, this premium should be tied as closely as feasible to each delivery's health impact, that is, to how it affects the health prospects of the recipient and of others who might (directly or indirectly) become infected through this recipient. In the case of vaccines, the aggregate health gain from treating a given group of persons depends on facts about the vaccine administered, the time of vaccination, the persons vaccinated, and their environment, including existing disease vectors.

It is not feasible to assess the specific health gain achieved by each vaccination event individually. It is also unnecessary because the objective is not to ascertain the whole causal truth, but to provide optimal incentives to firms. For this purpose, reasonable approximations suffice. The reward should be sensitive both to the extent to which a vaccination reduces the probability that its recipients will become infected and will infect others and to the extent to which it reduces the harm its recipients will suffer if they become infected despite having been vaccinated. These sensitivities result in a larger payment for vaccinations that are delivered sooner or provide better protection, including protection that works against more variants, remains effective for longer, or makes the vaccinated person less infectious to others.

These sensitivities also entail higher rewards for vaccinating persons who are at higher risk of being infected or of infecting others, such as persons in high-incidence countries or regions and persons in more interactive professional roles. However, such incentivizing differentiations in the reward per vaccination make sense only if the vaccine provider controls the relevant delivery decisions. If the vaccine supply is allocated by a national health service or by some international organization (such as the WHO or COVAX), then the reward should more simply be based on time of delivery and, mainly, on vaccine quality as manifested in its average impact, given the general risk level prevailing in the relevant (national, regional, or global) delivery population.

In the case of COVID-19, a timely guarantee that the vaccination of every eligible person will be generously rewarded would have required a large reward pool, some $50–100 billion, or 0.1-0.2% of the combined gross national incomes of affluent countries. This is substantially more than the few billion dollars COVAX has had at its disposal, enabling it to deliver 2 billion doses thus far.[35] But this amount needed for a universal guarantee is also vastly smaller than the pandemic's economic cost and the national economic stimulus packages it has triggered, both valued at many trillions of dollars worldwide.

The proposed universal vaccination guarantee would remove any anxiety about whether vaccinating humanity's poorer half will be profitable. It would incline competing pharmaceutical innovators to seek to develop a

[35] UNICEF, "COVID-19 Vaccine Market Dashboard," November 22, 2023, https://www.unicef.org/supply/covid-19-vaccine-market-dashboard.

highly effective vaccine and then to ramp up manufacture quickly to capture a large share of the reward pool. When a firm's profit margin is essentially fixed, based on its supply costs and the quality of its vaccine, then this firm's profit depends on speed and quantity. Each firm has an incentive, then, quickly to supply large quantities of its product. Firms would compete to use all available manufacturing capacity around the world, while also expanding such capacity toward accelerating deliveries.

These desirable incentives would be disturbed if some buyers offered to pay extra to jump the queue. Such offers would cause departures from the optimal vaccination sequence, for example, affluent people with low contagion risk would be vaccinated even before frontline health workers in low-income countries. The prospect of such offers could also undermine the incentive for firms to deliver with maximum speed. Slowness of manufacture and delivery prolongs the demand-supply imbalance that encourages and sustains a bidding war among rich buyers. Any such disturbance would make it more difficult to contain and suppress the pandemic globally. Rich countries should therefore subordinate their national self-interest to the best global strategy by agreeing to draw their vaccines solely from the single vaccine flow created by the global reward pool. They failed to do so during the COVID-19 pandemic. As of this writing (November 22, 2023), only about 11.5 percent of vaccine doses have been distributed through COVAX, with most of the rest distributed through a secretive bidding war among mostly affluent buyers.[36] It is no wonder that the relevant pharmaceutical firms have been in no hurry to ramp up manufacture to immunize the world; potential profits from vaccinating the poorer half are small and doubtful, while large profits beckon from a prolonged demand-supply imbalance. In low-income countries, 67 percent of citizens have not received even one vaccine dose.[37]

VI. Conclusion

Inspired by Bernard Mandeville's *Fable of the Bees*, Smith praises self-interest as the key motivation for sustaining a prosperous society: "It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest. We address ourselves, not to their humanity but to their self-love, and never talk to them of our own necessities but of their advantages."[38] He supports this thought

[36] Gabe Alpert, "International COVID-19 Stimulus and Relief," *Investopedia*, November 22, 2023, https://www.investopedia.com/government-stimulus-and-relief-efforts-to-fight-the-covid-19-crisis-5113980; Andrea Shalal, "IMF Sees Cost of COVID Pandemic Rising Beyond $12.5 Trillion Estimate," *Reuters*, January 20, 2022, https://www.reuters.com/business/imf-sees-cost-covid-pandemic-rising-beyond-125-trillion-estimate-2022-01-20.

[37] Our World in Data, "Coronavirus (COVID-19) Vaccinations," November 22, 2023, https://ourworldindata.org/covid-vaccinations.

[38] Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations* (Chicago, IL: University of Chicago Press, 1976), 18.

https://doi.org/10.1017/S0265052523000432 Published online by Cambridge University Press

https://doi.org/10.1017/S0265052523000432 Published online by Cambridge University Press

not by denying the existence of genuine benevolence and humanity, but by characterizing them as unreliable in various ways. Many people lack these motives or possess them only in small measure, people focus their moral attention in idiosyncratic ways with the result that many needy persons fall through the cracks, and people tend to be bad judges of what others really need. It is much better, then, for human beings to take charge of their own needs, bargaining with their own resources for the goods and services they need and value, which also better accords with their autonomy and dignity.

For an economy based on self-interest to work well, even its poorer members must have sufficient prosperity to exert market demand. As Smith notes: "No society can surely be flourishing and happy, of which the far greater part of the members are poor and miserable. It is but equity, besides, that they who feed, cloath [sic] and lodge the whole body of the people, should have such a share of the produce of their own labour as to be themselves tolerably well fed, cloathed and lodged."[39] Smith is then not celebrating self-interest as such, but advocating it as part of a more comprehensive structuring of society that prominently includes the avoidance of poverty.

We might add a similar qualification to Milton Friedman's famous dictum that "the business of business is business."[40] This should not be read as an unqualified endorsement of firms being single-mindedly dedicated to maximizing profit, regardless of context. It is better understood as endorsing profit-devoted firms as one central element in a structuring of social arrangements that also ensures that the profits of firms are reasonably well-aligned with how their activities affect human flourishing. It is only in the context of such an alignment that firms can wholeheartedly concentrate on the task of making money and political authorities can let them get on with this task without heavy-handed regulation and oversight. Absent such alignment, Friedman's dictum fails. Firms must not engage in human trafficking or sell poison gas and torture equipment to aggressive or oppressive autocrats abroad, for example, nor should their government leave them legally free to do so. Favoring low state interference in the economy, Friedman would have been wary of impact funds. However, given the obvious need for solid innovation incentives, he might have preferred them to the stifling thickets of state-enforced monopolies that firms must now contend with.

A free world worthy of this name is structured so that, as far as reasonably possible, all human beings can live in freedom; can meet their needs; can benefit from and contribute to human progress; and are safe from pandemic, ecological, and other threats. Such a world can be reached in small steps that allow for learning and adjustment. Impact funds are a good early

[39] Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, 88.

[40] Milton Friedman, "The Social Responsibility of Business Is to Increase Its Profits," *The New York Times Magazine*, September 13, 1970.

step, as they would not impose losses on anyone or materially alter the existing international distribution of power. By collaborating in a modest reform that benefits all, especially lower-income populations, the more powerful states can build the mutual trust needed for subsequent, more difficult steps.

Philosophy, Yale University

https://doi.org/10.1017/S0265052523000432 Published online by Cambridge University Press