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Philanthropic Cause Prioritization

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A few years ago, a systematic data collection effort found that philanthropic grantmakers from 157,064 foundations in 23 countries were disbursing over $150 billion in funding annually (Johnson 2018). Many foundations decide how much and where to give based on their founders' personal precommitments to specific issues, geographies, and/or institutions. If a grantmaking organization instead wanted to select problems based on a general measure of impact per dollar spent, how should it approach this goal? What tools could it use to identify promising cause areas (climate change, education, or health, for example) or to compare grants that achieve different results? These are thorny—and ultimately, largely philosophical—questions with many plausible answers.

This paper focuses on an approach followed by the grantmaking organization Open Philanthropy, my employer, for its "Global Health and Wellbeing" portfolio (as distinct from its work on farm animal welfare and global catastrophic risks).[1] Open Philanthropy has a broad mission: to help others as much as possible with the resources available to it, without any precommitments to particular issues or geographic areas. As a result, we have invested in "cause prioritization," by which we mean the investigation and selection of focus areas based on their expected net benefits. Open Philanthropy, like many grantmaking organizations, contains "program areas" focused on thematic causes. Once we start giving in a specific cause area, we

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[1] I will refer to this subset of Open Philanthropy as "Global Health and Wellbeing", but in practice that name also incorporates work on farm animal welfare. You can read more about Open Philanthropy's Global Health and Wellbeing portfolio here: https://www.openphilanthropy.org/our-global-health-and-wellbeing-and-global-catastrophic-risks-grantmaking-portfolios/.

hire an expert program officer to oversee strategy and grantmaking. From there, we attempt to combine subject-matter expertise with cost-effectiveness analysis. Overall, we seek to benefit from the discipline and insight that quantification and modeling can provide, while taking care to avoid mistaking the legibility of our analysis for ultimate truth. When evaluating a grantmaking opportunity, we use a mix of cost-effectiveness modeling, prompts to elicit strong cases for and against decisions, quantitative predictions, and expert discretion.

Our continually evolving approach consists primarily of two overlapping frameworks. First, we seek to equalize marginal philanthropic returns. Thus, we aim (where possible) to translate the "benefits" of potential grantmaking across different thematic areas addressing premature death, morbidity, and material deprivation into a single unit, then select the highest-impact-per-dollar areas and fund them to a point of equalized marginal benefits. If we believe that an additional dollar can generate more benefits in one cause area versus another, we reallocate. By iteratively comparing incremental opportunities, we aim to arrive at cause areas with marginal opportunities that have similar expected benefits, producing an optimized overall portfolio.

Second, we try to find outlier opportunities by assessing the importance, neglectedness, and tractability of cause areas—what we call "the INT framework." As an illustrative example, I discuss reducing exposure to lead: it is important enough to cause significant and widespread health and economic harms, which are concentrated among people living in low- and middle-income countries; it is relatively neglected by public and philanthropic funders; and initial evidence suggests tractable interventions in high-burden areas. Although we have not completed our definitive benefit-cost analysis of lead exposure prevention, Open Philanthropy has contributed to early grantmaking focused in this area through our partner GiveWell.[2] Fundamentally, we see the INT criteria as additional proxies for estimating expected cost-effectiveness in areas where doing so directly is too difficult or error-prone, not as a separate set of desiderata.

This essay describes, at a high level, how Open Philanthropy uses the two frameworks of equalizing marginal philanthropic returns and assessing importance, neglectedness, and tractability in practice. The conclusion offers a few reflections on ways we could be wrong.

Our perspective draws upon and applies lessons from many economics-focused philanthropic organizations. Our closest collaborator, GiveWell, uses a very similar

[2]Open Philanthropy began as a partnership between GiveWell and Good Ventures, a philanthropic foundation founded by Cari Tuna and Dustin Moskovitz (who was one of the cofounders of Facebook and Asana). Open Philanthropy became an independent organization in June 2017. For an overview of our history, see https://www.openphilanthropy.org/about-us/. Open Philanthropy allocates significant funding based on GiveWell's recommendations. In July 2021, Open Philanthropy made a grant of $8 million to Pure Earth (https://www.givewell.org/research/incubation-grants/Pure-Earth-lead-exposure-July-2021) and, in December 2021, a grant of $1.2 million to the Center for Global Development (https://www.givewell.org/research/incubation-grants/Center-for-Global-Development-lead-exposure-December-2021), both following GiveWell's recommendations.

approach. Our work also overlaps with GiveDirectly and the cost-effectiveness standard that direct cash transfers provide, as well as the scaling frameworks used by Development Innovation Ventures at USAID,[3] Evidence Action's Accelerator,[4] and the Clinton Health Access Initiative (CHAI)'s Incubator.[5] We are avid consumers of economics research (for example, Kremer et al. 2023), we often attempt to synthesize and replicate literatures (for example, Roodman 2023), and we are eager to see further academic economics research that addresses our decision-relevant questions.[6]

While our work at Open Philanthropy is heavily informed by economics, we depart from traditional economics assumptions in a few important ways. As one example, we currently value averting life-years lost equally all over the world, rather than relying on a local willingness to pay. Second, we explicitly depart from the common economics assumption of noncomparability of preferences—that is, we are willing to add up winners and losers and we apply a common (logarithmic) utility function over income for all people in the world. Finally, we generally use normative rather than market or government interest rates for valuing streams of utility.

Equalizing Marginal Philanthropic Returns

At Open Philanthropy, we seek to apply the basic economic principle of marginal analysis to philanthropic giving. Our Global Health and Wellbeing work is grounded in four claims. First, the world has widespread and cheaply preventable suffering, and a significant portion of it takes the form of premature death, morbidity, and material deprivation among the global poor. Second, the costs and outcomes of interventions tackling these issues are sufficiently similar that they can be usefully compared against one another. Third, when faced with multiple philanthropic opportunities that generate similar benefits, all else equal, we would like to choose the one that produces more benefits per dollar. Finally, most causes exhibit diminishing marginal returns with respect to funding, especially funding from a single source.

Consider the hypothetical example of a grantmaker choosing between two areas, both focused on saving children's lives: malaria treatment in sub-Saharan Africa and childhood cancer treatment in the United States. Both are worthy causes, but an additional dollar spent on the first will likely save more lives in expectation than one spent on the second. Far more children—both in raw numbers and as a percentage of the population—die from malaria in sub-Saharan Africa than

[3]For more on Development Innovation Ventures at USAID, see https://www.usaid.gov/div.
[4]For more on Evidence Action's Accelerator, see https://www.evidenceaction.org/accelerator.
[5]For more information on CHAI's Incubator, see https://www.clintonhealthaccess.org/news/givewell-funds-chai-led-new-program-incubator/.
[6]For a list of open questions we are interested in, see https://www.openphilanthropy.org/research/social-science-research-topics-for-global-health-and-wellbeing/.

from cancer in the United States. Specifically, 387,000 people under the age of 20 died of malaria in sub-Saharan Africa in 2019 (a rate of 67.5 per 100,000); in contrast, roughly 7,420 people under the age of 20 died of neoplasms in high-income countries (a rate of 3.1 per 100,000), according to the 2019 Global Burden of Disease report (Global Burden of Disease Collaborative Network 2020). Moreover, seasonal malaria chemoprevention is cheaper than cancer treatment. Estimates across contexts in Burkina Faso, Chad, Mozambique, Nigeria, and Togo suggest that all cycles of seasonal malaria chemoprevention can be administered for an annual cost between $5 and $6.50 per child (GiveWell 2024).

Given these background facts, a grantmaker might begin by allocating funding to malaria treatment—focusing on the most cost-effective opportunities first, then moving to less cost-effective ones once those are exhausted—until the marginal dollar spent on malaria saves the same number of children's lives in expectation compared to a dollar spent on cancer treatment. In this hypothetical example (no existing philanthropic organization is large enough to carry this example to its logical conclusion), the grantmaker may end up funding both malaria and cancer, but the malaria program would likely be much larger.

There are many objections to this style of analysis. For example, malaria chemoprevention is cheaper than cancer treatment, but cancer treatment might prevent certain death versus preventing a small chance of death. In addition, children who would have died of malaria might be more likely to be exposed to other risks and thus have shorter life expectancies than children who are cured of cancer. However, by sharpening our analysis further, we can address these concerns by estimating changes in the probability of survival, and by accounting for different life expectancies by considering years of life saved. Life expectancies do differ, but generally by much smaller margins than the costs of averting one death.

How do we define "benefits" across a wide range of grantmaking activities? How do we convert between health and economic benefits? How do we generate an overall measure of impact per dollar spent—such as cost-effectiveness or social return on investment—to evaluate opportunities and set a "bar" for grantmaking? The rest of this section walks through Open Philanthropy's answers to these questions.

How Do We Define Economic Benefits across a Wide Range of Grantmaking Activities?

To date, Open Philanthropy's Global Health and Wellbeing work has largely focused on interventions that forestall premature death and improve morbidity ("health benefits") and those that improve material deprivation ("economic benefits"). These are, of course, not the only outcomes that matter. Over time, we hope to consider a greater diversity of consequences. However, as a starting point, measures of health and economic benefits capture much of what is immediately important for the global poor, who are a major focus of our work.

To decide whether Open Philanthropy should launch a new philanthropic program in lead exposure instead of in a different cause area like climate change or tobacco control, we need a common currency for evaluating the potential economic

and health benefits that our grantmaking might accomplish in each of these areas. I will refer to these fungible units as "OP dollars." My explanation here draws on Favaloro and Berger (2021).

To measure economic benefits, we use a logarithmic model of the utility of income—that is, a 1 percent increase in income is valued equally, regardless of the starting point. The log model offers simplicity and consistency with our reading of the literature (as a recent example, Elminejad, Havranek, and Irsova 2023). While we would prefer to capture consumption, we often use income as a stand-in because it is easier to measure. In addition, because the beneficiaries of our grantmaking activities are often people living in low- and middle-income countries, consumption and income generally do not differ greatly since savings and taxes are low.[7]

We define $1 OP as the impact equivalent to raising the income of one person with an income of $50,000 (which was approximately US GDP per capita when we first developed this framework) by $1 for one year. In general, the value of an income change can be expressed as:

$$\$v = \$50{,}000 \times w \times \ln(1 + z\%) \times y.$$

Here, $\$v$ OP corresponds to a $z\%$ change in income for w number of people for y years. In other words, this economic intervention increases welfare by a multiple of v compared to giving $1 to someone with an income of $50,000.

Using this model, $1 given to someone with an income of $500 (that is, 100 times less than $50,000) would be worth $100 OP. Doubling a single person's income for one year, regardless of starting point, is worth approximately $35,000 OP ($z = 100\%$, $w = 1$, and $y = 1$):

$$\$v = \$50{,}000 \times 1 \times \ln(1 + 100\%) \times 1 = \sim\$35{,}000.$$

The idea that doubling someone's income from $50,000 to $100,000 is worth $35,000 OP arises because the logarithmic utility function encounters declining marginal returns over the course of a doubling; by the same logic, it is more valuable to increase 100 people's incomes by 1 percent than one person's income by 100 percent.

How Do We Define Health Benefits across a Wide Range of Grantmaking Activities?

For health gains, we use "disability-adjusted life years," often abbreviated as DALYs, a simplified metric for aggregating the severity and extent of different

[7]Data from Banerjee and Duflo (2009) shows under 15 percent of poor households around the world have a formal savings account. While informal mechanisms exist, less than 10 percent of poor households Banerjee and Duflo surveyed in India were part of an informal savings group. Households that do save are likely to be doing so as a precautionary measure to smooth consumption given variable incomes.

health conditions. The DALY total for a particular cause of death or risk factor is equal to the sum of "years of healthy life lost due to disability" and "years of life lost."

One of the most widely used and comprehensive sources for global estimates of disability-adjusted life-years is the Global Burden of Disease (GBD).[8] The GBD is a systematic effort, led by the Institute for Health Metrics and Evaluation (IHME)[9] and its network of over 11,000 collaborators, to estimate and compare the burden of hundreds of causes of death and risk factors. It uses data from a variety of sources to assign all deaths and disability-adjusted life-years to an exhaustive list of causes in order to produce internally consistent and comprehensive estimates at the global, national, and subnational levels for a range of age and gender groups (for more on the evidence used to create these estimates, see Institute of Health Metrics and Evaluation 2020b, p. 23). The IHME publishes results in "rounds," which provide estimates for new years, reestimates for all previous years going back to 1980, and forecasts to 2040 of future burdens.

The Global Burden of Disease defines "years lived with disability" by multiplying the duration of a condition by a "disability weight" that captures its severity (where 0 is full health and 1 is death), as judged via surveys of the general public. For example, chickenpox has a low disability weight (0.006) as it results in a low fever and mild discomfort, but does not cause major or lasting disruptions to daily life. In comparison, severe malaria has a higher disability weight (0.113) as it causes fever, pain, and fatigue which greatly disrupt life.[10]

The Global Burden of Disease defines "years of lives lost" by subtracting "the age at death from the longest possible life expectancy for a person at that age. For example, if the longest life expectancy for men in a given country is 75, but a man dies of cancer at 65, this would be 10 years of life lost due to cancer" (Institute for Health Metrics and Evaluation 2020a). One objection to this approach is that it does not take into account predicted life expectancy for a randomly selected individual with a particular condition. For instance, a person prevented from dying of one cause may face a greater risk of premature death than is suggested by the methodology above.

In short, a disability-adjusted life year for a given condition corresponds to years of healthy life lost to a cause of death or a risk factor, both in terms of shorter life

[8]The World Health Organization (WHO) similarly estimates burdens of disability-adjusted life-years for diseases in their Global Health Estimates (GHE), though it departs from the Global Burden of Disease in a few key ways. The GHE estimates tend to rely more on vital registration statistics provided by Member States, as well as modeling from WHO groups and UN agencies (WHO 2020a). Where these data do not exist, the GHE will draw upon the GBD's estimates. The GHE also uses different assumptions; for example, by using the highest projected human life expectancy for 2050 rather than observed life expectancies (WHO 2020b). The WHO GHE tends to be less comprehensive than the GBD, making available for download only country-level burden estimates for the years 2000, 2005, 2010, and 2019 for a few age groups.

[9]The IHME has led the Global Burden of Disease since 2010. Previously, the GBD was led by the World Health Organization (Mathers 2020).

[10]For a full list of disability weights, see https://ghdx.healthdata.org/record/ihme-data/gbd-2019-disability-weights.

expectancy and partial years of healthy life lost according to the disability weights. There are many critiques of disability-adjusted life-years in general, and in particular of the use of disability weights. For example, these weights may not incorporate consequences unrelated to the health of the affected individual (say, grief experienced by loved ones), and sufficient consideration may not be given to the experiences of people living with the relevant conditions; for example, Karimi, Brazier, and Paisley (2017) find in a small survey that "the public [compared to patients] underestimated the effects of problems in usual activities compared to problems in mobility."

We rely on disability-adjusted life years because measurements are available globally across a large number of health conditions via the Global Burden of Disease, though that does not mean we endorse all elements of the process used to elicit disability weights or specific values. A key advantage of the GBD is that it calculates DALYs across causes of death and risk factors in a consistent manner. One concern is that if we deviate from the GBD estimates for one condition because of a specific piece of evidence, we are uncertain whether we would deviate for all other conditions if we spent similar time evaluating them (though in reality we often try to corroborate the GBD estimates). Because we are ultimately undertaking a comparative exercise, consistent measurement is critical. We remain open to adopting alternative measures that allow for global comparisons, and we have looked into several options. However, we have yet to find one that meets our criteria for robustness and consistency. For the purposes of this paper, for example, I am taking the DALY estimate from the GBD for lead exposure as given, without adjustments. In practice, Open Philanthropy instead tries to estimate the counterfactual life expectancy of those affected by our work: if people avoid death from one cause, how long would they expect to live before dying for another reason? This change tends to decrease the health impact of many interventions we typically consider.

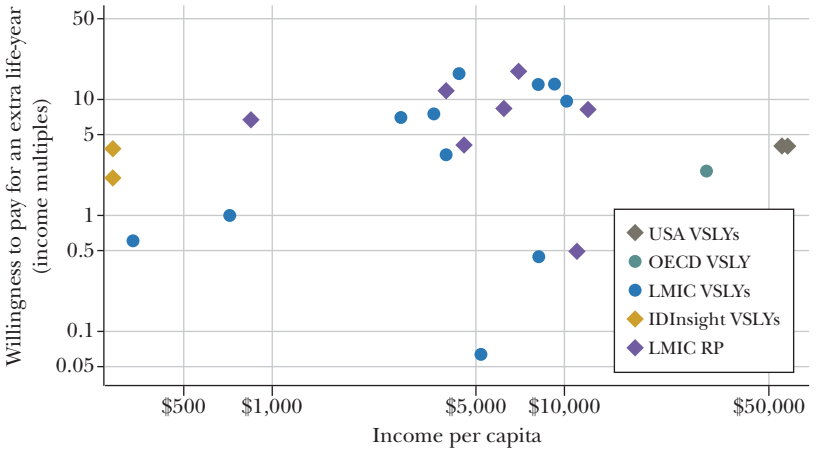
How Do We Convert between Health and Economic Benefits?

We have set an exchange rate between health and economic benefits in order to allow us to compare interventions with different types and degrees of impact. We arrived at our current ratio on the basis of research that captures peoples' revealed and stated preferences regarding this tradeoff.

Favaloro and Berger (2021) surveyed the "value of statistical life" literature.[11] Figure 1, reproduced from that blog post, plots the estimates found in Robinson, Hammitt, and O'Keefe's (2019) meta-analysis. Some studies (shown as diamonds) use actual choices that workers make between jobs with different wages and health risks, or choices that consumers make in purchasing health-protecting items, to reveal the value placed on reducing the risk of lost life. Other studies (shown as circles) use survey tools that seek to elicit a stated value of reducing risks to life compared to other values. The two yellow diamonds represent findings from a paper

[11] The concept of the "value of a statistical life" is controversial. Objections include that it is wrong to put any monetary value on life and that relying on stated and revealed preferences for the "value of a statistical life" can imply unacceptable variation (for example, across income levels), among other concerns.

Figure 1
Willingness to Pay for an Extra Life-Year as a Multiple of Annual Income per Capita



Source: Reproduced from Favaloro and Berger (2021).
Note: This figure plots estimates found in Robinson, Hammitt, and O'Keefe's (2019) meta-analysis, expressed as willingness to pay for an extra life-year as a multiple of annual income per capita. VSLY stands for "value of a statistical life-year." LMIC RP stands for studies that show revealed preference in low- and middle-income countries.

conducted by Redfern et al. (2019), commissioned by GiveWell, which surveyed people demographically similar to the beneficiaries of GiveWell's recommended charities. Most of these studies report a willingness to pay between 0.5 and 10 times annual income for an extra year of healthy life.

We have also considered the subjective wellbeing literature, which asks individuals to rate life satisfaction, typically on a scale from one to ten points. One needs a model to translate reported life satisfaction into subjective wellbeing and to imply a tradeoff with mortality, but it is possible to solve for the change in income that would generate a similar increase in satisfaction-point-years as extending life by one year. In general, relying more heavily on this evidence would lead to a greater emphasis on health (as opposed to economic) benefits than our current approach.

On the basis of this research, we decided provisionally to value a disability-adjusted life-year approximately three times more than doubling a person's income for one year, as this lies around in the middle of the research findings surveyed above. This multiple is also roughly consistent with guidance from other actors focused on global health; for example, the World Health Organization previously recommended a cost-effectiveness threshold of three times per capita GDP (Griffiths, Maruszczak, and Kusel 2015).

Our valuation of a disability-adjusted life year is $100,000 in the metric of OP dollars described above, or approximately three times $35,000 OP (the value of

an income doubling for a single individual for one year described above). Notably, the valuation of $100,000 OP cannot be directly compared to local incomes because we value absolute dollars very differently across contexts (according to our logarithmic utility function; for example, $1 given to someone living on $500 per year is worth $100 OP).

We think our valuation on health relative to economic benefits may be too low based on the evidence in Figure 1, but most of Open Philanthropy's Global Health and Wellbeing work already focuses on health, so we view the decision not to place an even higher valuation on health as conservative. Placing a value on this tradeoff is a consequential decision for our prioritization of projects and remains a work in progress. We hope to find more projects like Redfern et al. (2019) that generate new evidence on this question, focused on people living in low- and middle-income countries.

How Do We Generate an Overall Measure of Impact per Dollar Spent to Evaluate Opportunities and Set a "Bar" for Grantmaking?

We compare individual opportunities based on their social return on investment, equal to expected benefits expressed in OP dollars divided by costs in absolute (that is, not OP) dollars. We define a unit of cost-effectiveness as the return on investment generated by giving $1 to someone with an income of $50,000, which is equivalent to extending an individual's life by one healthy year at a cost of $100,000.

To set a cost-effectiveness bar, we try to estimate the philanthropic return on investment of our least cost-effective dollar—what we hope is our last dollar if we correctly prioritize the most cost-effective opportunities first. On a day-to-day basis, we decide to make a grant if and only if we believe it will—in expectation—generate more health and economic benefits per dollar than our bar. If not, we save that funding in the hopes of finding another, better opportunity.[12] If we consistently cannot find interventions above our bar, we incrementally lower it. In 2021, we published details describing how we settled on a bar of a cost-effective return of 1,000 (Favorolo and Berger 2021). Since then, we have continued to update this value based on our best understanding of available philanthropic opportunities.

Importance, Neglectedness, and Tractability

"Equalizing marginal returns" is a useful framework for evaluating and comparing specific interventions, but it often does not produce practical recommendations when considering unfamiliar problem areas where we do not yet know

[12]We have also considered how to approach intertemporal optimization. Drawing on work from Trammell (2021) and others, we have developed a model to weigh factors incentivizing spending sooner (for example, cost effective opportunities may become harder to find as the world improves or the possibility of high-impact philanthropy growing over time) and spending later (for example, taking advantage of market returns in the meantime before acting, and more time to learn).

what interventions are feasible. To evaluate cause areas at a high level, we use the INT framework.[13] For importance, how many are affected by the problem and how intensely? For neglectedness, how much attention does this problem currently receive and how much is it likely to receive in the future, absent intervention from Open Philanthropy? For tractability, can a philanthropic funder make headway?

Here, I apply the INT framework to the issue of lead exposure. I also discuss the heuristics to complement the INT framework, along with an example of how this has led us to consider grantmaking in the area of farm animal welfare.

Applying the INT Framework to Lead Exposure

The 2019 Global Burden of Disease results—the most recent figures available publicly in full—estimate that lead exposure accounts for approximately 900,000 deaths and approximately 22 million disability-adjusted life-years lost annually by exacerbating risk factors for cardiovascular diseases, mental disorders, and kidney disease (Global Burden of Disease Collaborative Network 2020). Over 95 percent of the burden is concentrated outside of high-income countries. To provide a rough comparison with other causes of death, lead exposure would fall between HIV/AIDS (approximately 864,000 annual deaths) and tuberculosis (approximately 1.18 million annual deaths). The 2021 GBD results—which are only partially available—estimate that lead exposure is responsible for 1.57 million annual deaths (Global Burden of Disease Collaborative Network 2023). The World Bank offers an even higher figure, considering mediation through mechanisms in addition to hypertension, estimating 5.5 million annual deaths attributable to lead (Larsen and Sánchez-Triana (2023).

Lead exposure is commonly quantified via the concentration of lead in the blood and measured in units of micrograms per deciliter (μg/dL). In a systematic review of studies published between 2010 and 2019 reporting blood lead levels in low- and middle-income countries, Ericson et al. (2021) found that among countries with sufficiently representative data, 49 percent of children had blood lead levels over 5 micrograms per deciliter.[14] For reference, in Flint, Michigan, the center of a major scandal on child lead exposure in the United States, the estimated percentage of children above 5μg/dL was approximately 12 percent in 2006 and 3 percent in 2016 (Gómez et al. 2018).

A wide array of evidence supports a connection between lead exposure and poor health, including animal evidence (for example, as summarized in US EPA 2013), epidemiological evidence based on correlations between lead exposure and health and economic effects (for meta-analyses, see Navas-Acien et al. 2007; Lanphear et al. 2018), and quasi-experiments, such as when NASCAR shifted its car-racing

[13] We describe the INT framework in more detail at https://www.openphilanthropy.org/cause-selection/.
[14] According to the Center for Global Development's "A Call to Action to End Childhood Lead Poisoning Worldwide": "The 5 μg/dL is not a biological threshold of great significance, but represents a standard formerly used by the US Centers for Disease Control to indicate higher lead exposure than most US children; it is still used by the WHO and commonly applied as a benchmark reference level" (https://www.cgdev.org/sites/default/files/call-action-end-childhood-lead-poisoning-worldwide.pdf).

to unleaded gas in 2007 (Hollingsworth and Rudik 2021), or when regulations caused US battery-recycling sites to shift to Mexico in 2009 (Tanaka, Teshima, and Verhoogen 2022).

Indeed, although we rely on the Global Burden of Disease estimates for purposes of comparability, our best guess is that this report has underestimated lead's health burden. This is in part due to modeling choices that overestimate the "safe" level of lead exposure (Shaffer et al. 2019) and in part due to health outcomes not included in the GBD study, such as stillbirths, which may increase with lead exposure (Clay, Hollingsworth, and Severnini 2023). In addition, lead exposure also has cognitive effects. The research literature has substantiated a biological mechanism by which lead can impair cognitive ability by replacing calcium in the brain (Rădulescu and Lundgren 2019), and includes both well-identified animal studies of lead affecting cognition (Anderson, Mettil, and Schneider 2016; Rice and Gilbert 1985) and several meta-analyses summarizing observational studies and natural experiments in humans that consistently find a negative effect of lead exposure on IQ (Larsen and Sánchez-Triana 2023; Crawfurd et al. 2023; Schwartz 1994; Lanphear et al. 2005).

Estimating the magnitude of lead exposure on economic outcomes is difficult. Childhood lead exposure and measures of parental socioeconomic status appear to be correlated, and given that most evidence in humans is observational, it is difficult to know whether the effect sizes are overstated because of persistent omitted variables (for one attempt to unpack these issues, see Lanphear et al. 2005, especially Table 4). Still, taken as a whole, we find the collective evidence indicating a link between lead exposure and cognitive outcomes compelling.

To evaluate neglectedness, we try to estimate the total amount of "relevant" spending on a given issue. "Relevant" is difficult to define crisply, but it broadly refers to funding that targets the same problem through channels we might also consider funding (that is, we typically exclude private investments as well as spending on basic research elucidating the mechanisms of lead exposure's adverse impacts). Several years ago, collective efforts to combat lead exposure in low- and middle-income countries received less than $10 million annually in philanthropic funding (Bernard and Schukraft 2021), and in 2023 that number increased to just over $11 million (Bonnifield and Todd 2023). We estimate that there is currently approximately $10–15 million per year in relevant spending.[15] In general, when total estimates are not readily available, we are often able to use public data sources and conversations with peers at other funders to calculate a rough order-of-magnitude sense of the degree of "relevant" funding devoted to some issue.

In determining tractability, despite the limited philanthropic attention focused on lead exposure so far, some interventions suggest that the issue could be addressed

[15] The main organizations working to reduce lead exposure include International Pollutants Elimination Network and its member organizations, Lead Exposure Elimination Project, Global Alliance to Eliminate Lead Paint, Global Alliance on Health and Pollution, Occupational Knowledge International, Pure Earth, Vital Strategies, the Center for Global Development, and UNICEF. Key funders supporting this work include GiveWell, USAID, the Swedish International Development Agency, the Global Environment Facility, the Clarios Foundation, and the World Bank.

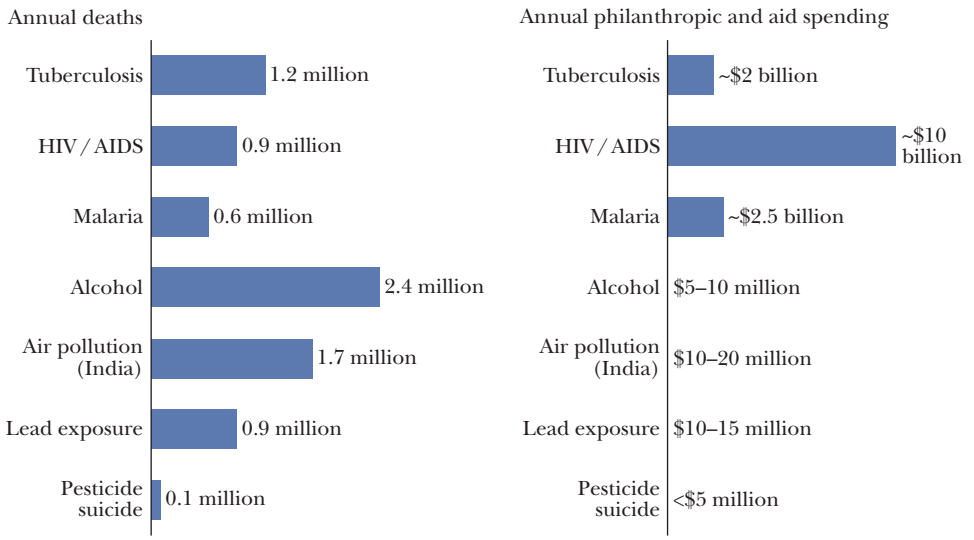
inexpensively. For example, until recently, a major source of lead poisoning in Bangladesh came from the use of lead chromate in brightening turmeric (a commonly-used cooking spice), identified by a group of researchers at Stanford University and a Bangladeshi nonprofit organization called icddr,b. By testing samples in markets, advocating for compliance among suppliers, and enacting government fines to enforce existing policy, the research team and the government of Bangladesh were successful in decreasing contamination dramatically, lowering the proportion of contaminated turmeric samples from 47 percent in 2019 to 0 percent in 2021 (Forsyth et al. 2023). Similarly, Pure Earth has partnered with the government of the Republic of Georgia to identify sources of lead in spices and reduce contamination via new regulations, consumer and producer education, heightened monitoring of spices at markets, and increased regulatory enforcement (Berg 2022). In addition, Lead Exposure Elimination Project (LEEP) has had success working with the governments of Malawi (LEEP 2021) and Pakistan (LEEP 2023) to implement lead paint regulation. Tractability is typically the hardest criterion for us to assess when exploring new causes, and we find that many potential causes fall in a vague, middling range, making them difficult to differentiate along this dimension.

Heuristics to Complement the INT Framework

Within our INT framework, we often rely on a few additional heuristics. One such heuristic compares the ratio of neglectedness to importance across different problems. To give an example, for lead exposure, our best guess of philanthropic spending in reducing lead exposure per disability-adjusted life-year lost is 45 cents, which is two orders of magnitude lower than our estimate of the equivalent figure for malaria and tuberculosis, themselves neglected diseases, and at least three orders of magnitude lower than our estimate for cancer (see Figure 2 for some of these comparisons). To present another similar metric, lead exposure constitutes approximately 1 percent of the global disease burden; using the estimate of $150 billion in annual philanthropic funding (Johnson 2018), the $10 million in annual funding directed at lead constitutes less than 0.01 percent, again a difference exceeding two orders of magnitude. Though the comparison does not reveal anything about tractability—whether it is more difficult to make progress in lead, malaria, and tuberculosis compared to cancer—it is a useful rule of thumb that suggests there may be overlooked low-hanging fruit. In this instance, these areas are likely neglected at least in part because the victims of lead, malaria, and tuberculosis are concentrated in low- and middle-income countries instead of high-income ones. In other cases, opportunities might be neglected because they are relatively new, technically or logistically complex, and/or high-risk.

A second heuristic is to look for opportunities that present a special role for philanthropy relative to market-based or democratic mechanisms (this paragraph paraphrases an idea described internally by Open Philanthropy's CEO, Alexander

Figure 2
Annual Deaths Compared to Annual Philanthropic and Aid Spending



Source: Reproduced from Snowden (2023).
Note: This figure compares annual deaths with annual philanthropic and aid spending attributable to various diseases and risk factors. "Pesticide suicide" refers to self-poisoning with agricultural pesticides.

Berger).[16] In many of the cause areas where we believe our support has been most influential, the beneficiaries are often structurally underrepresented. For example, we support advocacy to reduce barriers to immigration, especially from low-income to high-income countries, and to combat restrictive local land use regulations. In both areas, political systems—which tend to focus on the interests of existing constituents—can undervalue the interests of potential participants who would benefit from more liberal policies. We also allocate a large portion of our giving to global health and development challenges specific to low-income countries. These problems almost always receive fewer resources than comparable health challenges in high-income countries. Most inequality occurs between rather than within countries, and democratic institutions in high-income states typically have limited interest in addressing this discrepancy.

A third heuristic that we use for neglectedness considers expanding one's moral circle to include those not widely recognized as in need of "empathy or moral concern" (Karnofsky 2017). Our work on farm animal welfare is most representative of this lens: most grantmaking organizations do not consider animals as

[16]For links at the Open Philanthropy website to topics mentioned in this paragraph, see https://www.openphilanthropy.org/focus/immigration-policy/ for immigration policy, https://www.openphilanthropy.org/focus/land-use-reform/ for land use reform, and https://www.openphilanthropy.org/focus/global-health-development/ for global health and development.

targets of philanthropic attention. As a result, we see outsized opportunities for impact, as some "quick-win" grants in this area would otherwise not be made. That said, we try to avoid prioritizing novelty as an end in itself. We aspire to "radical empathy," but only in the sense that "our goal is to do the most good we can, not to seek out and support those causes which are most 'radical' in our present society" (Karnofsky 2017).

The Outlier Opportunities Principle

Areas that are important, neglected, and tractable seem more likely to offer highly cost-effective, specific interventions upon further investigation. This approach can also capture what we call the "outlier opportunities principle": "If we see an opportunity to do a huge, and in some sense 'unusual' or 'outlier' amount of good according to worldview A by sacrificing a relatively modest, and in some sense 'common' or 'normal' amount of good according to worldview B, we should do so (presuming that we consider both worldview A and worldview B highly plausible and reasonable and have deep uncertainty between them)" (Karnofsky 2018).

Open Philanthropy applies this principle in contexts beyond our Global Health and Wellbeing work. For example, via our farm animal welfare grantmaking, we spend millions of dollars each year supporting efforts to improve the lives of animals confined on factory farms.[17] It is extremely difficult to compare human lives lost due to, say, tuberculosis to the experience of billions of chickens confined to battery cages. That said, the cause of farm animal welfare stands out under the INT framework. By one estimate, US animal shelters and rescue groups (often for dogs and cats) raise approximately $2.8 billion per year (IBISWorld 2023),[18] or approximately $431 for each of the 6.5 million animals that enter shelters and rescues annually (ASPCA 2024). By contrast, farm animal advocacy groups raise approximately $90 million per year for work in the United States (Farmed Animal Funders 2021), which equates to approximately $0.01 for each of the 10 billion animals farmed last year (or around $0.04 for each of the 2.5 billion farm animals alive at any time) (Ritchie, Rosado, and Roser 2023). We believe that before Open Philanthropy began grantmaking in this area, the space was at least relatively neglected. Finally, tractability seems high, because there are clear ways for a philanthropist to make progress, for instance by supporting advocacy to secure corporate commitments related to animal welfare, or by investing in research into animal product alternatives.[19] Even if animals' capacity to experience suffering is only a

[17] For more on our farm animal welfare grantmaking, see https://www.openphilanthropy.org/focus/farm-animal-welfare/.

[18] Based on conversations with experts, we believe this number is an underestimate. The actual figure is likely closer to $4 billion a year, which would be approximately $615 spent for each shelter animal.

[19] For an analysis of funding in farm animal welfare before we began grantmaking, see https://www.openphilanthropy.org/research/treatment-of-animals-in-industrial-agriculture/#3-who-else-is-working-on-this. For a few "wins" in our farm animal welfare portfolio, which underscores the area's tractability, see https://www.openphilanthropy.org/research/a-year-of-wins-for-farmed-animals/.

small fraction of humans', funding in this area may alleviate much more suffering than other opportunities due to its sheer scale.

Critiques and Limitations

Comparing philanthropic cause areas is hard, and in practice allocation decisions are much messier than the framing I have used above may imply.

Our frameworks are full of uncertainties, and at times we may not implement it well. To give a few examples within the issue of reducing lead exposure, many of the underlying pieces of evidence have small sample sizes, are potentially vulnerable to confounding variables, and do not cover the populations we aim to target with our grantmaking. These issues could lead to large errors in our estimates of the size of the problem. We also do not have a robust sense of how blood lead levels relate to different sources of lead exposure, and so when moving to practical grantmaking, we might not address the most important sources of contamination. We could also be undercounting harms from reducing lead in products. Additionally, we might be underestimating the extent to which future health technologies (for example, better drugs for safely chelating lead out of blood) will address the harms posed by lead, which would reduce the counterfactual impact of taking action today.

In addition, our framework may inherently produce important blind spots. We may be prone to overrate marginal changes and underrate the possibility for transformation. For example, our framework might overlook basic science opportunities with unknown paths to impact. Although we conduct surveys in an attempt to capture beneficiary preferences,[20] we are almost certainly missing decision-relevant information. We strive for consistency, but we often struggle to capture systematically the many different benefits and harms a single intervention can generate, especially when those effects extend far into the future and/or are indirect. It is also difficult to trace the causal effect of our funding on an organization's behavior, and of that behavior's impact on the world.

We know we are not the first to encounter these dilemmas, and we do not believe we have perfected implementation. Any attempt to define the benefits of philanthropic work touches on long-standing philosophical and economic questions, and we recognize that we are frequently less-than-fully-correct or just outright wrong. We aim to keep all of this in mind, and approach our work with humility.

That said, we also believe that setting clear goals and defining acceptable tradeoffs have forced us to confront potential biases when determining what causes deserve our empathy and support. Further, this framework has provided us with the ability to compare causes on a relatively equal footing with rigor and transparent assumptions. As we continue to improve our work and our understanding of the world—including as beneficiaries of a growing body of social scientific

[20] For example, see https://www.openphilanthropy.org/grants/idinsight-beneficiary-preferences-survey/.

knowledge—we think that this approach will lead us to support opportunities with greater positive impact per dollar than we would otherwise find.

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