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Research at the Auction Block

Problems for the Fair Benefits Approach to International Research

BY ALEX JOHN LONDON AND KEVIN J.S. ZOLLMAN

The "fair benefits" approach to international research is designed to produce results that all can agree are fair without taking a stand on divisive questions of justice. But its appealing veneer of collaboration masks ambiguities at both a conceptual and an operational level. An attempt to put it into practice would look a lot like an auction, leaving little reason to think the outcomes will satisfy even minimal conditions of fairness.

These are paradoxical times for medical research that crosses national boundaries. On the one hand, there is widespread recognition that research funded by entities in high-income countries but carried out in low- and middle-income countries raises important questions about fairness and justice. On the other hand, the lack of consensus about which conception of justice or fairness should regulate cross-national social relations has created an almost principled aversion to directly addressing such issues when evaluating international research initiatives.

"Procedural" approaches are often advocated by those seeking to reconcile theoretical agnosticism about normative questions with meaningful regulatory guidance.[1] It should come as no surprise, therefore, that one of the most prominent approaches to regulating the conduct of cross-national research, the "fair benefits" approach, adopts a procedural strategy.[2] The fair benefits approach is supposed to respect the autonomy of host communities, facilitate free and informed decision-making, and empower host communities to advance their own interests. It is also supposed to bring about outcomes that are fair in several concrete respects, ensuring that host communities are not exploited, all without taking a controversial stand on divisive questions of social and distributive justice.

We will argue, however, that despite its allure, the fair benefits approach suffers from fundamental ambiguities at both a conceptual and an operational level. These ambiguities make it something of a moving

Alex John London and Kevin J.S. Zollman, "Research at the Auction Block: Problems for the Fair Benefits Approach to International Research," *Hastings Center Report* 40, no. 4 (2010): 34-45.

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target, as some of its key features have not been described in operationally useful detail. In order to fill this gap, we will propose an economic model that captures the most intuitive and straightforward ways of implementing it. This analysis reveals that the outcomes most likely to result from its application in practice are inconsistent with the features of fairness that its proponents claim it will produce. As a result, what appears to be an appealing flexibility of the fair benefits approach may be at best simply a lack of operational clarity and at worst an internal inconsistency.

In the end, our analysis illustrates the importance of demonstrating how a procedural approach will manage or mitigate conflicts between the values in its domain, not simply obscure them from view. It also suggests that recourse to procedures that are in some sense neutral between competing conceptions of justice or fairness may represent a romantic, preeconomic view of procedures. One lesson that we draw from the now well-developed literature on procedures in economics—so-called mechanism design—is that somewhat similar procedures can result in radically different outcomes. The process of designing and selecting relevant procedures is often highly influenced by substantive values, including judgments about the appropriateness of their outcomes. Stakeholders should therefore be wary of the idea that procedures can avoid recapitulating substantive debates about the nature of fairness while retaining sufficient operational clarity and content to be action-guiding.

The "Fair Benefits" Approach

Over the past decade, the volume of research that is sponsored by entities from high-income countries but carried out in low- and middle-income countries has increased substantially,[3] spurring a vociferous and now voluminous debate about the ethical standards that should be used to regulate it.[4] The debate has been complicated by the fact that research in high-income countries is carried out within a very different social, economic, and scientific context than research in low- and middle-income countries. Populations in less wealthy countries often lack a widespread and robust system of public health and therefore have higher burdens of communicable and preventable disease. As a result, there can be a significant divergence between the health priorities of low- and middle-income countries and the high-income countries that sponsor and carry out research. Similarly, a substantial portion of the disease burden in less wealthy countries represents the effects of social and economic deprivation. In many cases, the central problem is a lack of access to existing medical and public health interventions, rather than the slow pace of cutting-edge medical research. Finally, because most low- and middle-income countries lack a substantial social investment in scientific research, the research agenda is frequently set by foreign sponsors. Key elements of the research infrastructure may also be underdeveloped or missing altogether. Some of these elements pertain to regulation and oversight. Others represent components in the complex division of social and economic labor necessary to ensure that the fruits of scientific inquiry are translated into interventions, policies, or procedures that physicians, nurses, clinics, or the public health service can use to better address the community's health needs.

Given these differences, research carried out in low- and middle-income countries may well not be relevant to the health priorities of host communities. High-income countries may export the risks and burdens of research to populations already burdened by deprivation and disease and import knowledge that is of value only to their own populations. Even when individual trial participants stand to benefit from participating in such research, there are questions about the fairness of carrying out research in low- and middle-income countries if the science is not relevant to the priority health problems of the larger community. Although there is widespread agreement that these are important questions, there is substantial disagreement over the requirements necessary to ensure that research in this context is just, fair, and otherwise ethically acceptable.

The negotiations of the fair benefits approach are about apportioning the surplus value generated by the research—its expected profit minus its cost. Host communities make more attractive research venues if they lower the share of the surplus they are willing to accept in return. Researchers can then choose the venue with the lowest costs.

The fair benefits approach has been articulated in good part through a critique of what is known as the "reasonable availability" approach. On this latter approach, the main ethical problem in cross-national research is that host communities and research participants will bear the risks of research without benefiting from its fruits. Many commentators have argued that in such cases, researchers and their sponsors exploit participants and host communities.[5] In order to rectify or avoid this, some contend that agreements must be made in advance to allow the fruits

of successful research to be reasonably available to host communities.[6]

Proponents of the fair benefits approach have been staunch critics of this view. They agree that the central problem to be avoided in this context is exploitation. But they claim that exploitation is a very specific moral wrong that has largely been misunderstood. They adopt Alan Wertheimer's account of exploitation, which holds that exploitation is a property of microlevel interactions between individual parties to some discrete agreement or cooperative endeavor.[7] Party A exploits party B if party A receives "an unfair level of benefits as a result of B's interactions with A."[8] The fair benefits proponents then argue that reasonable availability does not avoid the problem of exploitation. In early-phase research or unsuccessful late-stage research, there is no intervention to be made available to communities, and host communities bear the costs of participation without receiving any offsetting benefits. Similarly, they argue that it is overly paternalistic to require host communities to accept—and perhaps even to pay for—the fruits of a particular research study when there may be different benefits that those communities would prefer.[9]

A proper understanding of exploitation is supposed to reveal two insights that are fundamental to the fair benefits approach. First, the key to avoiding exploitation is ensuring that the people who bear the risks and burdens of research receive fair benefits through the conduct or results of research. Second, *all* types of benefits that might flow from research—not just access to the investigational agent—must be considered in determining whether the benefits are fair.[10] The issue is not "what" benefits host communities receive but the fairness of the "level" or amount of benefit.[11] As a result, the fair benefits approach would allow host communities to bargain with researchers for a fairly wide range of benefits. Instead of access to the study intervention, for instance, they might want help in cleaning their water supply, constructing a road, or vaccinating their children.

One profound implication of this approach is that if the host community is not interested in the information or interventions that the study is designed to generate, and if providing posttrial access to the study intervention is not obligatory, then cross-national studies may not need to be aligned with or to focus on the health needs or priorities of the host community. The fair benefits approach is so attractive because it supplants a cumbersome mix of requirements enshrined in international documents and replaces them with a single, seemingly manageable process. What's not to like?

Because the central issue in this approach is avoiding exploitation, and because this requires ensuring that host community members receive a fair level of benefits, the ethical question at the heart of the fair benefits approach is: How is the fairness of a division of benefits to be assessed? It will be useful to keep track of several important claims that proponents of the fair benefits approach make about fairness. For instance, we are told that a fair distribution should have certain properties:

> **Benefits must increase with burdens.** "As the burdens on the participants and the community increase, so the benefits must increase."[12]

> **Benefits must increase with benefits to others.** "Similarly, as the benefits to the sponsors, researchers, and others outside the population increase, the benefits to the host population should also increase."[13]

> **Benefits must track relative contributions.** "The level of benefits that a community should receive to ensure a fair deal depends on the community's contribution relative to the contributions of all other parties that are involved in the research project, including sponsors, investigators, subjects, and other communities."[14]

These properties of fairness are so important that they are used as grounds for rejecting the reasonable availability approach: "Reasonable availability fails to ensure a fair share of benefits; for instance, it may provide for too little benefit when risks are high or benefits to the sponsors great."[15]

On the other hand, the proponents of the fair benefits approach lament that:

> (a) Currently, there is no shared international standard of fairness; reasonable people disagree.[16]

Additionally, different individuals and different communities may have different valuations of the diverse benefits that might be on the table at any time. As a result, fairness is to be judged by the host population:

> (b) Most importantly, only the host population can determine the value of the benefits for itself.[17]

> (c) Ultimately, the determination of whether the benefits are fair and worth the risks cannot be entrusted to people outside the population, no matter how well intentioned.[18]

The claims in (a), (b), and (c) are quite strong. They provide the justification for the claim that "the population being asked to enroll determines whether a particular array of benefits is sufficient and fair."[19]

At the core of the fair benefits approach are two additional principles that are supposed to put members of the host community in a position to determine whether a particular division of benefits is fair. The first is called "collaborative partnership." At the level of concrete action, researchers and host community members are to engage in a process of bargaining or negotiation in which host communities and researchers negotiate

a specific package of benefits to be exchanged. The second is a principle of transparency that is supposed to regulate this process. In order to understand their account of fairness, therefore, we need to understand how these principles are supposed to structure the process of bargaining or negotiation.

Unfortunately, although we are told that the parties should engage in a process of "collaborative partnership," we are not given specifics about how that process should be designed and conducted. As a result, a number of important questions remain unanswered. For example, given the strong claims in (a), (b), and (c), what is the relationship between this process and the claims that in a fair division, benefits should correspond to burdens, benefits to others, and relative contributions? Is the bargaining process supposed to be shaped so that the resulting bargains satisfy those criteria? Is it to be shaped in a way that makes it more likely that these conditions will be met? Given that the host community is the ultimate arbiter of whether a division of benefits is fair, does it follow that agreements that do not satisfy these conditions still count as fair as long as the host community freely accepts them?

How significant of an ambiguity is this? One can easily imagine that some stakeholders are attracted to the fair benefits approach precisely because they think it will ensure that host communities' benefits correspond to burdens, benefits to others, and relative contributions. In particular, they may like the idea that when low- and middle-income countries host research that may generate hundreds of millions, if not billions, of dollars in revenue, then the host community will itself accrue substantial benefits. Moreover, the prospect that host communities may reap a significant economic benefit may mitigate the prospect that the research could focus primarily on high-income countries' health needs. In short, the fair benefits approach may just look like a more effective way of helping people in low- and moderate-income countries.

In contrast, others may like the fair benefits approach because it makes host communities the final arbiters of fairness. In their view, a division of benefits that does not correspond to burdens, benefits to others, or relative contributions would not necessarily be unfair as long as the host community freely accepts it. So they may be attracted to the idea that high-income countries could export research to low- and middle-income countries because it allows sponsors to incur a significant cost savings while being free to use their significant bargaining power to ensure that they capture almost all of the benefits from the transaction. In short, these people may embrace the fair benefits approach because it looks like the most effective way of advancing *sponsors'* interests.

Similar ambiguity surrounds how the so-called principle of transparency that proponents of fair benefits call for is supposed to ensure that the outcomes of collaborative partnerships are fair. To fulfill this principle, a publicly accessible database of all agreements concerning benefits between research sponsors and host communities must be created. This repository is supposed to be maintained by an independent party, such as the World Health Organization, with the expectation that researchers, sponsors, governments, and potential host communities will all have access to the data. In fact, their view requires that the database should be advertised to potential host communities so that they can be familiarized with the various packages of benefits that have been exchanged in the context of other research projects.

How is this database supposed to ensure that agreements are fair? First, it eliminates informational asymmetries between the host country and the researcher. This is important because a fair distribution of benefits is defined as one that is arrived at under certain conditions.

Under auction-like structures, the burdens that research subjects or host communities bear do not directly influence the share of the benefits that they receive from hosting a trial. If the outcomes of this process give benefits that equal the burdens, it will be the result of happy coincidence, not the negotiation process.

> (d) A fair distribution of benefits at the micro-level is based on the level of benefits that would occur in a market transaction devoid of fraud, deception, or force, in which the parties have full information.[20]
>
> (e) A population in a developing country is likely to be at a distinct disadvantage relative to the sponsors from the developed country in determining whether a proposed level of benefits is fair.[21]

The database is supposed to reduce the likelihood of fraud or deception by giving potential host communities access to a wide range of information about the costs and benefits associated with a research project. Seeing what other communities have received in the past also enables them to consider whether a proposed division of benefits is a competitive offer.

The proponents of the fair benefits approach also claim, however, that the principle of transparency is

supposed to advance a regulative goal as well as eliminate informational asymmetries. The approach has been criticized on a number of grounds, one of which is that it does not recognize the extent to which inequalities in bargaining power will allow researchers and sponsors to exact hugely disproportionate benefits from the agreements reached in this process.[22] In response, proponents of the fair benefits approach have argued that:

> (f) The criticisms seem to miss the fact that the fairness of agreements is not determined just by bargaining. The purpose of the transparency principle is to provide an external check that independently assesses the fairness of agreements.[23]
>
> (g) Such information will facilitate the development of "case law" standards of fairness that evolve out of a number of agreements.[24]

The idea that transparency provides an "external check on fairness" is difficult to reconcile, however, with the claim in (a), (b), and (c) that there is no international standard for fairness and that the host community must therefore decide for itself whether the risks are worth the benefits.

How serious of a problem is this? Well, it's difficult to say, and as a general point, the difficulty is itself part of the problem. We know so little about how the process of bargaining is supposed to be carried out that we do not really know how the database will influence the process. It is unclear exactly what kind of "check" it is supposed to provide.

As a result, some may be attracted to the claim that the principle of transparency will function as an effective external check on the fairness of agreements—by ensuring that benefits to host communities correspond to burdens, benefits to others, and relative contributions, or by providing an external check on the differences in bargaining power between host communities and international sponsors—while others might like the idea that the principle of transparency will only create a more transparent and informed negotiation process and that it will not override or constrain the decisions of host community members. As such, it would not function to offset the considerable bargaining power of research sponsors. Whose assessment is correct? In order to answer this question, we would need to know much more about how this process would be implemented in practice.

"Collaborative Partnership" Is Really an Auction

How might the fair benefits approach be carried out in practice? We start from the idea that ultimately, the negotiations are about apportioning the surplus value generated by the research. We assume that every study has an expected surplus (the expected profits minus the cost of conducting the research), and that some of this surplus can be transferred to the host community. We also assume that there are some costs associated with hosting the research and that no community will agree to host research where its share of the surplus is less than its expected costs.

Simultaneous, iterated bidding. Let's begin by supposing that researchers are free to negotiate simultaneously with as many parties as they like. In this case, researchers inform potential host communities about the costs, risks, and potential benefits associated with a particular research initiative, and after consulting their constituent members, each community proposes a basket of benefits that it would be willing to accept in return for hosting the initiative. Assume further that researchers are then free to inform each community of what the others are asking. This would allow each community to compare a given level of benefit to the costs they believe they would incur for hosting the research. At some point, one community will be willing to accept a level of benefit that is less than what it would cost another community to host the initiative, and the latter community will withdraw from the negotiations. Other communities will consider whether the current bid is above their cost and, if it is, they will lower their bid. Eventually, only two communities will be left. Negotiations will continue until the bid reaches the cost of the second-place community. That community will not lower its offer, the community with the lowest cost will reduce its bid accordingly, and the bidding will then stop. The community with the lowest cost thus pays a fraction more than the cost of the second-place bidder. The division of benefits that results from this process will be such that the eventual winner gains the difference between its own cost and the cost to the second-cheapest host community.

The process just described has the structure of a *first price, open cry* auction—the structure found in most live and Internet auctions. Instead of bidding larger amounts of money to purchase a commodity, potential host communities try to make themselves more attractive venues for research by lowering the share of the surplus value generated by the research that they are willing to accept in return for hosting a research initiative. Researchers can then choose the venue with the lowest costs, in effect maximizing the surplus that they can expect to receive from the bargaining process.

Some may object that this is not the kind of negotiation process that proponents of the fair benefits approach had in mind, but nothing in the fair benefits approach prohibits this form of negotiation. In fact, the scenario here is consistent with the few features of the approach that proponents of this view do stipulate: Researchers are negotiating directly with individual host communities. The transparency requirement is met. Each community determines which offers they are willing to accept, and benefits accrue directly to the eventual host community.

If the fair benefits approach is to rule out this kind of negotiating procedure, then the negotiation process needs to be much more clearly explained. We need details about either how that procedure should be conducted, or about the properties that it should satisfy and how those properties rule out this kind of approach. It is true, however, that this procedure may not be what proponents of the fair benefits approach had in mind. After all, they do not describe a process of repeated negotiation between communities, and although they stipulate that all parties must have access to the database of previous agreements, they do not state that each community must be aware of what other communities are willing to accept.

One-shot bidding. So we might imagine, instead, a process in which researchers engage in separate negotiations with each community and each community has one opportunity to inform researchers of the amount they regard as a fair return. This eliminates the repeated bidding and, in turn, eliminates the condition of complete transparency about the cost structure of competing communities.

Unfortunately, as long as each community knows that there are others interested in hosting the research, and each knows that it has but one chance to submit an offer, then, on average, the outcome will be the same as the first price, open cry auction. Negotiations of this type have the structure of a *first price, sealed bid* auction, which eliminates the condition of perfect information but not the incentive to make educated guesses about the cost structure of other bidders. Bidders simply have to base their negotiation strategies on those guesses. Sometimes they miscalculate and get less than they would in an open cry auction; other times they get lucky and get more; on average, however, the outcomes will be the same.

There are many ways in which these two processes may differ, but the irrelevance of these differences is established by a powerful and elegant formal result known as the "revenue equivalence theorem." What this theorem proves is that, given a particular set of constraints, the average amount paid in an auction (here interpreted as the amount of the surplus kept by the researcher) is the same.[25] On average, the researcher will keep all of the surplus minus the average value of the second-lowest cost.

The revenue equivalence theorem makes some assumptions about the structure of the interaction, but these are not likely to be controversial in the present context. Briefly, there must be an imbalance between supply and demand (modeled as multiple sites vying to host a single research initiative). Those bidding cannot enjoy taking risk for its own sake (although they may be willing to take risks). The structure of the process by which research is awarded must be such that the person who bids the lowest receives the research, even if they pay an amount different from their bid. If a community has the highest possible cost for hosting research, it must not expect to get any surplus. There are some restrictions on what communities believe about each other's costs, and all of this must be known by all parties. (The assumptions are discussed in greater detail in appendix A at http://link.thehastingscenter.org/40-4-supplement.pdf.)

Notice that many of the features we commonly associate with auctions are not required for the outcome to be equivalent to the outcome of an auction. The high bidder need not pay her bid, or even the bid of the second-highest bidder. Bids can be made simultaneously or sequentially. And the result holds for a variety of negotiations that differ from both of the examples we sketched above.

Modified one-shot bidding. For instance, in an effort to remove the strategic element from the competitive bidding process, each community might be informed that there will be one chance to submit a bid and that although the lowest bidder will win, that bidder will receive an amount of the surplus that is equivalent to the bid of the second-lowest bidder. This is known as a *second price, sealed bid* auction. The strategic element to the bidding is removed, but the result remains roughly the same. The researcher expects to receive the same amount of the surplus as in the other cases: almost all of it.

Auctions—and markets in general—are designed to harness the power of *competition*, not collaboration. We suspect that the fair benefits approach contributes to the view that research is an economic opportunity rightly governed by market norms.

Commitment with the chance of relocating in the future. In fact, a negotiation that lacks competitive bidding can still function like an auction over time. Perhaps, for instance, host communities are first chosen on the basis of factors such as existing relationships, convenience, and ease of conducting the research. These factors are similar to those that proponents of the fair benefits approach describe in their account of the Havrix study conducted in Thailand. Assume, however, that at the completion of the study, researchers have the option of locating subsequent studies elsewhere. As long as there are multiple potential host communities for each proposed research initiative, then communities with a lower cost structure have an incentive to approach researchers or their sponsors in an effort to host a subsequent research study. As long as there is a realistic possibility that researchers will relocate, then the threat of being

underbid in the future puts pressure on host communities to reduce both their costs and the amount of benefit that they seek in return.[26]

The Result of an Auction

Auction-like structures do an excellent job of realizing the features of ideal markets in (d) above that are central to the fair benefits approach. What do the outcomes look like?

Suppose that the anticipated benefits of a research project can be assigned a monetary value and that a particular project is expected to generate ten million dollars in surplus. To model the results of this bargaining process, we assign each host community a cost for hosting this initiative by randomly drawing a number between $100,000 and $1,000,000. If we randomly assign costs in this range to two host communities and carry out the auction process over and over, the average split will be $700,000 for the host community and $9,300,000 for the researcher. The average cost for the winning host community is $400,000, so the average profit is $300,000. If there are three communities, the average profit drops to $225,000 (a $550,000–$9,450,000 split). If there are nine, the profits are a meager $90,000 (a $280,000–$9,720,000 split).

What if we retain all of the assumptions above, but assume that the study is expected to generate ten billion dollars instead of ten million dollars in surplus? It turns out that the payouts to the host community remain the same. The additional profits are absorbed entirely by the sponsor.

What if research does not impose such steep costs on host communities? If we assume that the expected profit is ten million dollars but that the costs to host communities are in the range of zero to $100,000, then with two bidders, the expected profit for the host community is $33,333 (a split of $66,666–$9,933,334). For three bidders, the expected profit drops to $25,000 (a split of $50,000–$9,950,000), and if there are nine potential hosts, the expected profit drops to $10,000 (a split of $20,000–$9,980,000).

These negotiations can also have some counterintuitive consequences. Suppose that the costs for host communities are as described in our first example—somewhere in the range of $100,000 and $1,000,000. Now suppose that an altruistically motivated researcher wants to help defray the costs that host communities might incur from hosting a research project. He lobbies the research sponsor to use more of its own personnel, defraying personnel costs, or to bring in a mobile laboratory, defraying infrastructure costs. This altruistically motivated act would in fact work against the interests of host communities and would capture a potentially sizable increase in profit for the research sponsor because defraying the host communities' costs reduces the range of potential hosting costs, thereby decreasing the distance between the cost of the winner and the cost of the second-highest bidder. If costs could be reduced to the range of our second example—that is, zero to $100,000—then the benefits to host communities would decrease to those listed in the second example. In other words, with three bidders, the host community's expected profit drops from $225,000 to $25,000 and with nine bidders it drops from $90,000 to a paltry $10,000.

This modeling exercise allows us to answer some of the questions we raised above. For example, would the outcomes of this process satisfy the conditions that benefits to host communities must correspond to burdens, benefits to others, and relative contributions? Under auction-like structures, it is unlikely that any of these desiderata will be satisfied.

The first condition is that the benefits to the host community must increase as the burdens to participants and the larger community increase. Under auction-like structures, however, the benefits that the host community receives (that is, its profit) are not a function of the burdens that the research imposes on participants or the larger community. Sure, as costs for potential host communities rise, the size of the split that the host community receives will have to be larger in order to offset those costs. But "benefits" here are modeled as the share of the surplus that host communities receive that is over and above their costs. This is determined by the difference between the costs of hosting the research in the winning community and the costs of the community with the second-lowest costs, and by the number of communities that are party to the negotiations.

Another way of putting this point is to say that trials that are more expensive cost more to conduct. But it does not follow from this that host communities will receive more benefit from this higher cost. Low-risk or less burdensome studies for rare conditions may reward host communities with sizable profits, while high-risk or more burdensome studies for conditions that are quite common may produce minuscule profits for host communities. Our point is that under auction-like structures, the burdens that research subjects or host communities bear do not directly influence the share of the benefits that they receive from hosting a trial. If outcomes of this process satisfy this condition, it will be as a result of happy coincidence and not as a result of the structure of the negotiation process itself.

The second condition is that the share of the benefits that host communities enjoy should increase as the benefits for other stakeholders, such as sponsors, researchers, and others outside the population increase. Under auction-like structures, however, the degree to which others profit from a community's participation is basically irrelevant to determining how the surplus is divided. In particular, if we keep the costs of hosting a trial and the number of bidders fixed, then it does not matter if the projected profit is two million dollars or twenty billion dollars—the expected profit of

the host community does not change. If the host community can expect to receive twenty thousand dollars of benefit in the first case, then it can expect to receive that amount in the latter. It is therefore important to recognize that auction-like structures function in a way that makes ever satisfying this condition unlikely.

The third condition is that the benefits to host communities ought to be proportional to the community's contribution relative to other stakeholders. Unfortunately, the proponents of the fair benefits approach have not given us a clear account of what they mean by a "contribution." The above analysis establishes, however, that under auction-like structures, the contribution of the host community relative to those of researchers, sponsors, and others looks to be irrelevant to determining the share of the benefits that host communities receive. Even if there are only two communities in the world that could host a particular trial, the magnitude of the benefits that the eventual winner receives will be a function of the difference between its cost and the cost of the other community. If the trial can be conducted with few costs and the costs of the two communities are fairly close to one another, then the host community could expect to receive meager benefits.

The upshot of this analysis is that there is little reason to believe that the process at the heart of the fair benefits approach will produce outcomes that satisfy the minimal conditions of fairness that the proponents of this view themselves endorse and use as grounds for rejecting other views.

The modeling exercise also demonstrates the potential for the fair benefits approach to result, in practice, in a race to the bottom. And just so this point is clear, note that the negotiation does not have to be structured as a first-price, open cry auction in order to obtain this result. The structural features that create the incentive for host communities to lower their bids are present even in the case where researchers locate their study in a particular community but have the option of relocating for subsequent studies. In fact, even some fairly restrictive and unrealistic requirements aimed at equalizing the bargaining power of researchers and host communities would be unlikely to prevent a race to the bottom. (See appendix B at http://link.thehastingscenter.org/40-4-supplement.pdf.)

Several additional factors increase the likelihood of a race to the bottom. First, there is anecdotal evidence that international research is increasingly mobile and that host communities understand that they must limit their requests for benefits or risk having researchers relocate.[27] The outsourcing of clinical trials has effectively created a market for companies—known as contract research organizations—whose purpose is to match research initiatives with potential host communities.[28] CROs seek profits by reducing research costs and more efficiently matching research with host communities, which gives them a powerful incentive to increase the size of their "portfolio" of potential communities that might host various research initiatives. This, in turn, makes the prospect of relocation very real for host communities. It also creates a market environment in which host communities are clearly competing with one another to secure access to research. Even if host communities are not bidding against one another each time they host a trial, the fact that the CRO can find a community that might be willing to host a similar study for less provides an incentive to reduce the size of the surplus that host communities seek to retain for themselves now.

What about the principle of transparency? It will do nothing to hinder the race to the bottom. The race to the bottom is actually facilitated by the full information requirement of ideal theory that this principle is supposed to approximate. Even more important, perhaps, is the suggestion floated by proponents of the fair benefits approach that data from this repository be disseminated to communities that might be eligible to host research initiatives;[29] that idea, if carried out, would serve to increase the number of potential host communities by bringing new "buyers" into the market. That is, potential host communities could see what others have received in the past and enter the market armed with the information that they need to make extremely competitive bids. After all, if I know that researchers located an ongoing study in one place for a given cost, and I know that my community could host that research for considerably less than that cost, then I have an incentive to approach the researchers, their sponsor, or their CRO in an effort to host their next initiative. Thus, even if the proponents of the fair benefits approach do not intend the database to be used as a marketing tool to bring new host communities into the market, CROs have a powerful incentive to use it this way. In short, rather than averting a race to the bottom, or setting a floor for the benefits that host communities

In practice, the fair benefits approach may entail that low- and middle-income countries are free to "collaborate" on research that advances the health interests of high-income countries while research sponsors use their considerable bargaining power to capture almost all of the benefits generated by the collaboration.

receive, the principle of transparency may actually place a ceiling on benefits as communities are forced by competition to seek less in return for hosting studies.

An Independent Check on Fairness?

One might object that the above characterization of the fair benefits approach is overly pessimistic because we have left out the regulative aspect detailed in (f) and (g). In this interpretation, the role of regulators might be to prevent a race to the bottom or to ensure that outcomes satisfy the principles that benefits to host communities must correspond to burdens, benefits to others, and relative contributions.

This objection dramatizes deep ambiguities within the fair benefits approach because it calls into question exactly what kind of procedural approach it is supposed to be. At some points, it sounds like a *pure procedural* approach. Under a pure procedural approach, an outcome or a state of affairs is regarded as fair if and only if it is the result of a particular procedure. That is, the fairness of an outcome consists in the fact that it was arrived at or produced by a particular procedure. But if the race to the bottom is prevented by a regulator imposing some constraints on which *outcomes* are acceptable, then the fair benefit approach is not a pure procedural approach. How do we determine which restrictions should be imposed by the regulator? It cannot be from this *procedure*, since the regulator must now impose on the parties outcomes that differ from those arrived at by the procedure.

At other points, the fair benefits approach is presented as if it were an *imperfect procedural* approach. In an imperfect procedural approach, the special value of the procedure lies in its ability to produce, imperfectly but more or less reliably, outcomes that are fair. On this view, though, the fairness of the outcome is constituted by something other than its relationship to a particular process. The value of the process lies in its ability to produce outcomes that are fair according to some independent standard or criterion of fairness.

But this interpretation raises a host of new questions. In particular, what is the independent criterion for determining the fairness of outcomes? The previous discussion illustrates how proponents of this approach sometimes appeal to at least two potentially inconsistent criteria. One criterion requires that outcomes meet the conditions that benefits correspond to burdens, benefits to others, and relative contributions. Moreover, the claim that reasonable availability "fails to ensure a fair share of benefits" and indeed "may provide for too little benefit when risks are high or benefits to the sponsors great" seems to imply that satisfying at least the first two conditions is a necessary requirement for avoiding exploitation.[30]

Alternatively, another possible criterion follows (d) in defining fair outcomes as whatever "would occur in a market transaction devoid of fraud, deception, or force, in which the parties have full information." The proponents of the fair benefits approach seem to think that they can consistently endorse both of these criteria. In light of our analysis, this now seems dubious.

So there are two possibilities. One is to argue that fair outcomes should at least approximate the three conditions for apportioning benefits. In that case, we now need a detailed account of the procedures that will be used to enable researchers and host communities to negotiate in such a way that they are likely to arrive at outcomes that approximate these conditions. We have argued that on a number of plausible ways of making operational the conditions outlined in (d), these outcomes are unlikely to hold. If the job of ensuring that these principles are met is supposed to fall to regulators, then this would require a significant diminution of the expansive role of host community autonomy expressed in (c). On this new proposal, regulators, not host countries, would decide if a bargain is ultimately fair. Moreover, their decision would be based on a substantive view of fairness, not settled by a procedure. While this is a tenable position, it is very different from the original presentation of the fair benefits approach and would require a defense on substantive, rather than procedural, grounds.

A second alternative would be to stick with the market norms outlined in (d) and to jettison a commitment to the principles for apportioning benefits to host communities. Now the role of external regulators would be to make sure that actual agreements approximate those that would have been reached in the ideal market. In this case, we need a more precise specification of what constitutes the ideal market. For instance, is the ratio of buyers to sellers in the ideal market the same as in the actual one? If it is, then we are back to the discussion of auctions. Not only will the principles for apportioning benefits not hold, but regulators will not provide an external check on the bargaining process other than to ensure that there was no deception, fraud, or concealment.

If the ratio of buyers to sellers in the ideal market is not that of the actual market, then regulators might play the role of adjusting bargains to reflect the ideal ratio. This is also an interesting proposal, but it would require additional, substantive arguments to specify the ideal ratio and to justify using *this* feature to determine a fair distribution of benefits as opposed to some other view of fairness.

Pure Procedural Justice Revisited

Perhaps we have underestimated the appeal of the fair benefits approach as a pure procedural approach to issues of fairness. After all, "collaborative partnership" is a compelling ideal. What is there not to like about the idea that researchers and host communities should engage

each other as "partners," "collaborating" to advance shared ends, in a way that is respectful of the autonomy of the host community and its distinctive values and ends? The relationship of moral equality implied by "collaborative partnership" also strikes a welcome contrast to ethical imperialism or the inequalities of the "white man's burden." Since these values are the bioethics equivalent of mom and apple pie, perhaps we should follow them wherever they lead and simply call those outcomes "fair."

This sounds good. The problem is that endorsing these values does not entail that everyone who endorses them conceives of them in the same way. Nor does it entail that one has a set of procedures that are faithful to these values in practice.

The fair benefits approach contains several competing conceptions of the claim that sponsors and host community members should be treated as equals in their "partnership." One ideal is grounded in the norms of the market. All parties should be equally free to make binding contracts in light of full information, free from fraud, coercion, and deception. Within those constraints, there is nothing unfair about participants using inequalities in urgent needs, endowments, and the like to their strategic advantage.

In contrast, different ideals of equality and partnership undergird the principles that benefits to host communities must correspond to burdens, benefits to others, and relative contributions. Here, ideals of equal respect for welfare, partnership, and agency are conceived of in ways that differ from ideal market norms because they constrain the way that collaborators can use inequalities in endowments or urgency of needs to their strategic advantage. The problem is not simply that these different ideals lead to incompatible outcomes, but that the incompatibility of these outcomes reflects substantive differences in ideals of respect for others as moral equals.

Before we can know whether we should follow the procedures of the fair benefits approach wherever they lead us, its proponents need to specify a consistent set of ideals that these procedures are supposed to track or embody, justify the claim that these are the relevant ideals, and demonstrate that their procedures are faithful to those ideals, properly understood. Our claim is not that this cannot be done; it is that there appear to be several potentially incompatible ways of doing it, each representing a significant departure from the original ambitions of the approach.

For example, sticking with their claim in (d) that "a fair distribution of benefits at the micro-level is based on the level of benefits that would occur in a market transaction devoid of fraud, deception, or force, in which the parties have full information," proponents might simply embrace auction-like structures as the best way to ensure that negotiations satisfy these conditions. If these structures result in highly disproportionate divisions of benefits and if low- and middle-income countries wind up receiving a lower level of benefits than they would have received under reasonable availability, then the conclusion is just that such outcomes are not exploitative.

If proponents want to move in this direction, however, then they should drop the misleading language of "collaborative partnership." After all, there is a sense in which online auction sites like eBay respect the autonomy of participants and treat them as morally equal. But nobody is tricked into believing that whether they get the item at the end of that process depends on reasons that they offer to their "partners" in some collaborative, deliberative interaction. Auctions—and markets in general—are designed to harness the power of *competition*, not collaboration. More importantly, substantive arguments would be needed to justify the now-explicit claims that research is a commodity and that market norms are the relevant criteria of fairness.

Before we can know whether we should follow the procedures of the fair benefits approach, its proponents need to specify a consistent set of ideals that the procedures embody, justify that these ideals are relevant, and demonstrate that the procedures are faithful to them.

Moving Forward

At various points in our analysis, proponents of the fair benefits approach might object that we have relied on questionable empirical assumptions. For instance, we note that even if researchers are committed to conducting research in a particular community, other communities that could host future research projects at a lower cost have an incentive to recruit researchers away. But one could argue that hosting a trial may give that community an advantage over other communities, boosting their chance to retain future research initiatives while still increasing the benefits that they receive. So things might not turn out as badly as our model predicts. And perhaps this is the case with other features of our model, as well.

Several responses are in order. First, our analysis is intended to illustrate the importance of providing stakeholders with some framework for assessing the normative claims that one makes on behalf of a

proposed procedural approach. This framework should clarify for stakeholders how the proposed procedures are likely to behave given realistic assumptions, and it should help stakeholders understand the variables that will determine how the approach performs in actual practice. Proponents of the fair benefits approach have not done this, and we have tried to fill the gap. If proponents of the fair benefits approach have a different model to propose, they are welcome to elaborate it, but it is not a vindication of the fair benefits approach, as articulated to date, to leave our model and its conclusions unchallenged and simply hope that something will happen in actual practice that will prevent its predictions from coming to pass.

Second, one advantage of articulating a model of the form that we provide is that it makes such questions more tractable by bringing into focus the factors or variables that are relevant to the model's predictions. In this case, for example, whether researchers are likely to relocate may in no small part depend on the extent to which the relevant stakeholders view research as just another form of economic exchange. After all, research sponsors are under constant pressure to cut their costs and to stretch their resources. We suspect that, if anything, the fair benefits approach contributes to the view that research is an economic opportunity rightly governed by market norms. As such, the widespread endorsement of this view may reduce the inhibitions of various stakeholders to relocate research when doing so makes economic sense.

Third, in all cases, the probability that researchers will relocate in the future hinges on whether other communities can make themselves more attractive hosts. It would be a mistake to understand this claim as somehow imputing crude or insensitive motives to researchers. One of the points of our analysis is that the motives of various parties may matter much less than structural features of the system in which those parties are constrained to act. Researchers may have deep commitments to host communities, but they may not be able to live up to those commitments if they are under pressure from sponsors or others to relocate in order to cut costs. In fact, we have shown that how a particular system is structured can have such far-reaching consequences that it can create situations in which altruistically motivated acts have unintended, deleterious consequences.

Nothing in our analysis presupposes that stakeholders have unsavory motivations. Nevertheless, it is important to recognize that there are armies of well-paid professionals who make their living analyzing systems and figuring out how to maximize the returns of their firms. "Gaming the system" may be frowned upon in some forms of "collaborative partnership," but in the market, the ability to work the system to one's advantage is regarded as a virtue, not a vice. Since market norms play such a pervasive role in the fair benefits approach, these concerns are centrally relevant.

One implication of our analysis is that the fair benefits approach could easily wind up functioning in practice as a kind of ethical Trojan horse. Ambiguities and inconsistencies at the conceptual level may make it attractive to a broad range of stakeholders, each of whom has a different view of how to understand and reconcile its core commitments. But when it is carried out in practice, it may simply entail that low- and middle-income countries are free to "collaborate" on research that advances the health interests of high-income countries while sponsors from the high-income countries use their considerable bargaining power to capture almost all of the benefits generated by the collaboration.

We have also argued that in order to clarify the normative content of the fair benefits approach, its proponents cannot avoid engaging substantive issues of fairness and justice. In this regard, both proponents and critics need to pay greater attention to a move that the fair benefits approach uses to shape the terms of the debate, but for which we can find no explicit argumentation. Recall that Wertheimer treats exploitation as a microlevel concern—a property of discrete interactions between individual actors, independent of broader background concerns about rights and justice. As we mentioned above, the key issue on this view is not which benefits are received, but how much. This, in turn, motivates the view that whether a particular research project is aligned with and focused on the health needs of the host community is less relevant (if it is relevant at all) than the question of whether the community receives a sufficient level of benefits in return for hosting the study. And this leads to a view that effectively treats research as a commodity.

But even if one were to agree, for the sake of argument, that Wertheimer's view of exploitation is correct, this does not establish (1) that the most fundamental or important ethical issues in the context of international research are those that occur at the microlevel, (2) that moral duties in this context fall primarily on researchers (as opposed to other stakeholders such as governments, nongovernmental organizations, or funding agencies), or (3) that to the extent that researchers have duties in this context, they should be treated essentially as private parties with no prior obligations that are relevant to the exchange.

Moreover, we regard questions about the funding, regulation, and conduct of international research as issues of institutional design. But concerns about the fairness of *institutional systems* cannot be accommodated within Wertheimer's account of exploitation because his view applies only to the discrete interactions of individuals and not to the operation of institutions.

All sides of this debate need to be careful that in sharpening or refining the concept of "exploitation" they do not beg the question against those who view clinical and public health

research as unique social goods, who think that we in high-income countries have a duty to unlock the power of science to advance the health interests of people in less wealthy countries, and who ground such duties in larger norms of social, distributive, or rectificatory justice.

References

1. For a scathing criticism of the proliferation of procedural approaches to controversial questions in bioethics, see R. Ashcroft, "Fair Process and the Redundancy of Bioethics: A Polemic," *Public Health Ethics* 1, no. 1 (2008): 3-9.

2. Participants in the 2001 Conference on Ethical Aspects of Research in Developing Countries, "Fair Benefits for Research in Developing Countries," *Science* 298 (2002): 2133-34; Participants in the 2001 Conference on Ethical Aspects of Research in Developing Countries, "Moral Standards for Research in Developing Countries: From 'Reasonable Availability' to 'Fair Benefits,'" *Hastings Center Report* 34, no. 3 (2004): 17-27. Charles Weijer and Guy LeBlanc have also argued that what benefits members of host communities receive for participating in a clinical trial should be determined by a process of "moral negotiation," and they cite with approval some of the recommendations of the fair benefits approach. The analysis provided here would therefore apply also to their process of "moral negotiation." C. Weijer and G.J. LeBlanc, "The Balm of Gilead: Is the Provision of Treatment to Those Who Seroconvert in HIV Prevention Trials a Matter of Moral Obligation or Moral Negotiation?" *Journal of Law, Medicine, and Ethics* 34, no. 4 (2006): 793-808.

3. Department of Health and Human Services, *The Globalization of Clinical Trials: A Growing Challenge in Protecting Human Subjects* (Washington, D.C.: Office of Inspector General, 2001, OEI-01-00-00190); F.A. Thiers, A.J. Sinskey, and E.R. Berndt, "Trends in the Globalization of Clinical Trials," *Nature Reviews Drug Discovery* 7 (2008): 13-14.

4. M. Angell, "The Ethics of Clinical Research in the Third World," *New England Journal of Medicine* 337 (1997): 847-49; P. Laurie and S.M. Wolf, "Unethical Trials of Interventions to Reduce Perinatal Transmission of the Human Immunodeficiency Virus in Developing Countries," *New England Journal of Medicine* 337 (1997): 853-56; R.A. Crouch and J.D. Arras, "AZT Trials and Tribulation," *Hastings Center Report* 28, no. 6 (1998): 26-34; L.H. Glantz et al., "Research in Developing Countries: Taking 'Benefit' Seriously," *Hastings Center Report* 28, no. 6 (1998): 38-42; G.J. Annas and M.A. Grodin, "Human Rights and Maternal-Fetal HIV Transmission Prevention Trials in Africa," *American Journal of Public Health* 88, no. 4 (1998): 560-63; S.R. Benatar, "Global Disparities in Health and Human Rights: A Critical Commentary," *American Journal of Public Health* 88 (1998): 295-300; A. Attaran, "Human Rights and Biomedical Research Funding for the Developing World: Discovering State Obligations under the Right to Health," *Health and Human Rights* 4 (1999): 27-58; S.R. Benatar and P.A. Singer, "A New Look at International Research Ethics," *British Medical Journal* 321 (2000): 17-36; R. Macklin, "After Helsinki: Unresolved Issues in International Research," *Kennedy Institute of Ethics Journal* 11 (2001): 17-36; D.B. Resnik, "Developing Drugs for the Developing World: An Economic, Legal, Moral, and Political Dilemma," *Developing World Bioethics* 1, no. 1 (2001): 11-32; S.R. Benatar, A.S. Daar, and P.A. Singer, "Global Health Ethics: The Rationale," *International Affairs* 79 (2003): 107-138; J.H. Flory and P. Kitcher, "Global Health and the Scientific Research Agenda," *Philosophy and Public Affairs* 32 (2004): 36-65; A.J. London, "Justice and the Human Development Approach to International Research," *Hastings Center Report* 35, no. 1 (2005): 24-37.

5. Annas and Grodin, "Human Rights and Maternal-Fetal HIV Transmission Prevention Trials in Africa."

6. The Council for International Organizations of Medical Science holds that, "As a general rule, the sponsoring agency should agree in advance of the research that any product developed through such research will be made reasonably available to the inhabitants of the host community or country at the completion of successful testing. Exceptions to this general requirement should be justified and agreed to by all concerned parties before the research begins." Council for International Organizations of Medical Science, *International Ethical Guidelines for Biomedical Research Involving Human Subjects* (Geneva, Switzerland: Council for International Organizations of Medical Science, 1993), guideline 15.

7. A. Wertheimer, "Exploitation in Clinical Research," in *Exploitation and Developing Countries: The Ethics of Clinical Research*, ed. J.S. Hawkins and E.J. Emanuel (Princeton, N.J.: Princeton University Press, 2008), 63-104.

8. Participants, "Moral Standards for Research in Developing Countries," 19.

9. Ibid., 21. This point is also emphasized in Weijer and LeBlanc, "The Balm of Gilead."

10. E.J. Emanuel, "Benefits to Host Communities," in *The Oxford Textbook of Clinical Research Ethics*, ed. E.J. Emanuel et al. (Oxford, U.K.: Oxford University Press, 2008), 719-28, at 724-25.

11. Participants, "Moral Standards for Research in Developing Countries," 20.

12. Emanuel, "Benefits to Host Communities," 725. See also S. Gbadegesin and D. Wendler, "Protecting Communities in Health Research from Exploitation," *Bioethics* 20, no. 5 (2006): 248-53, at 251. See also Participants, "Moral Standards for Research in Developing Countries," 22.

13. Emanuel, "Benefits to Host Communities," 725. See also Gbadegesin and Wendler, "Protecting Communities in Health Research," 251, and Participants, "Moral Standards for Research in Developing Countries," 23.

14. Gbadegesin and Wendler, "Protecting Communities in Health Research," 251.

15. Participants, "Fair Benefits for Research in Developing Countries," 2133.

16. Participants, "Moral Standards for Research in Developing Countries," 23. The letters here and following are not part of the quoted material, but are assigned for ease of reference in the text.

17. Ibid.

18. Ibid., 22, and Participants, "Fair Benefits for Research in Developing Countries," 2134.

19. Participants, "Moral Standards for Research in Developing Countries," 22.

20. Ibid., 20.

21. Ibid., 23.

22. A.J. London, "Justice and the Human Development Approach to International Research," *Hastings Center Report* 35, no. 1 (2005): 24-37.

23. Emanuel, "Benefits to Host Communities," 725.

24. Participants, "Moral Standards for Research in Developing Countries," 24.

25. R.B. Myerson, "Optimal Auction Design," *Mathematics of Operations Research* 6, no. 1 (1981): 58-73; J.G. Riley and W.F. Samuelson, "Optimal Auctions," *American Economic Review* 71, no. 3 (1981): 381-92.

26. For a brief overview of repeated auctions, see P. Klemperer, *Auctions: Theory and Practice* (Princeton, N.J.: Princeton University Press, 2004), section 1.10.3.

27. A. Petryna, "Clinical Trials Offshored: On Private Sector Science and Public Health," *BioSocieties* 2 (2007): 21-40.

28. Ibid., and J. McManus and T. Saywell, "The Lure to Cure," *Far Eastern Economic Review* (February 8, 2001): 32-37.

29. Participants, "Moral Standards for Research in Developing Countries," 23.

30. Participants, "Fair Benefits for Research in Developing Countries," 2133.