## Abstract

*The International Covenant on Economic, Social and Cultural Rights (ICESCR) obligates states to "take steps individually and through international assistance and co-operation . . . to the maximum of [their] available resources" to realize the right to health. This obligation, however, is often dismissed because (1) realizing rights through "international assistance" is thought to intrude on state sovereignty and (2) it is impossible to say what is demanded by the "maximum of . . . available resources." These problems can be circumvented by "reading down" the mutual assistance clause, so that it demands only that steps be taken on a state's* own *territory, with its* pecuniary *resources. Industrialized states could use public funds to research diseases such as malaria, AIDS, and tuberculosis, but they have failed to consider their ICESCR obligations in making science funding decisions. These failures point to ubiquitous and grievous violations of international law.*

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*Le Pacte International Relatif aux Droits Economiques, Sociaux et Culturels oblige l'état à "agir, tant par son effort propre que par l'assistance et la cooperation internationales . . . au maximum de ses ressources disponibles," afin de garantir le droit à la santé. Cette obligation, toutefois, est souvent négligée et ceci parce que (1) assurer ces droits "par l'assistance et la cooperation internationales" peut être considéré comme un ingérence dans les affaires d'un état souverain et (2) il est impossible de savoir ce que l'on entend par l'expression "au maximum de ses ressources disponibles." On peut contourner ces problèmes si l'on interprète la clause d'assistance mutuelle de manière à ce qu'elle n'exige de l'état qu'il ne prenne des mesures qu'à l'*intérieur *de son territoire, avec ses propres moyens* financiers. *Les états industrialisés pourraient se servir de fonds publics pour financer la recherche sur les maladies telles que le paludisme, le SIDA et la tuberculose mais ces états ne remplissent pas les obligations stipulées par le Pacte lorsque sont prises les décisions de financement de la recherche. Ces lacunes mettent en évidence de nombreuses et graves violations du droit international.*

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*El Pacto Internacional de Derechos Económicos, Sociales y Culturales obliga a los Estados a "adoptar medidas, tanto por separado como mediante la asistencia y la cooperación internacionales . . . hasta el máximo de los recursos de que disponga," para poner en práctica el derecho a la salud. Sin embargo, esta obligación a menudo se desestima porque (1) poner en práctica los derechos a través de "la asistencia y la cooperación internacionales" se toma como una intromisión a la soberanía del estado; y (2) es imposible decir qué es lo que se exije por "el máximo de los recursos de que disponga." Estos problemas se pueden sortear si se "interpreta" la cláusula de ayuda mutua, de manera que exija que estas medidas se tomen sólo en el* propio *territorio del estado, con sus recursos* monetarios. *Los estados industrializados podrían usar fondos públicos para estudiar enfermedades tales como la malaria, el SIDA, la tuberculosis, pero no han tomado en cuenta sus obligaciones con el Pacto, en lo que se refiere a tomar decisiones para financiar estudios científicos. Estas fallas apuntan a constantes y graves violaciones a la ley internacional.*

# Human Rights and Biomedical Research Funding for the Developing World: Discovering State Obligations under the Right to Health

*Amir Attaran*

Of all the grotesque inequities that prevail in the world, that of health is arguably the most offensive. Nothing is more likely to distinguish a five-year-old in (say) Guinea from one in Great Britain. The latter is likely to be alive, healthy, and the object of adoration by its family; the former, on the other hand, will simply be fortunate not to be dead.

The desperateness of health in the developing world is readily borne out in statistics, whose impact on the reader is rather numbing out of the terrible truth which the numbers unerringly evince. For instance, the average British child at birth can expect a full 76 years of life; the Guinean child can expect only 44 years.[1] Much of this disparity relates to the comparative unavailability of medical interventions in less-developed nations. And as this article argues, more is caused by the near abandonment by the biomedical establishment of research on diseases endemic to the developing world.

A further few examples illustrate the disparity. By one year of age, the British child is 90% likely to have been vaccinated against measles—a token, cautionary gesture against a disease that had been 99% eradicated in Britain before vaccination even commenced in the 1960s.[2] By contrast, the Guinean one-year-old is only 40% likely to have received a measles vaccine, even though the disease is endemic to Guinea and among the biggest killers of children there.[3]

If the question of the availability of a mere vaccine for

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one disease does not seem significant, this is only one telling difference among many. Each year of life brings forward new, and potentially fatal, diseases of childhood. Unsurprisingly, it is the British child who is better able to fend off these risks. Whatever the differential advantages the British child enjoys in survivorship, they are cumulative, and in the course of a life they are fantastically significant. Over 99% of British children will survive to their fifth birthday, whereas 27% of Guinean children will not.[4] To put it another way, the staggering child mortality Guinea endures on a countrywide basis is reflected in the median age at death: For Britain, it is an elderly 77; in Guinea, it is, pathetically, only two.[5]

The Guineans who survive these treacherous early years continue to lead lives at risk. Diseases like malaria, tuberculosis, and schistosomiasis are prevalent in sub-Saharan Africa and routinely kill or debilitate in the prime of life, often depriving the family of a breadwinner and jeopardizing the health and well-being of all concerned. Only a handful of scientists the world over are employed to research these diseases. Cardiovascular disease, Alzheimer's, and cancer, by comparison, tend to afflict the British when they are quite old and well beyond the child-rearing years. Truly a legion of scientists, in academia and industry both, find their life's work in cracking the mysteries of these diseases.

The tragedy of agonizingly frequent illness and early death is no less than a backdrop before which African life constantly labors. Science and technology are conspicuously absent in changing this deplorable state of affairs.

In a century marked by progress in both the health sciences and the recognition of human rights, it is reasonable to ask whether a useful nexus exists between the two in breaking the developing world's intractable health problems. It is an article of faith in Western society that scientific research has enabled us to understand diseases and their causes, so that we have markedly improved our well-being in very little time. Leaving aside the question of whether one agrees with that science-driven causality (and there can be good reasons to disagree), the fact is that scientists do little research on the health problems of the developing world.[6] Diseases like malaria and tuberculosis, which kill millions each year and make others very ill, receive almost trifling research funding

from national research councils and other state funding agencies. The problem is summed up nicely by the Commission on Health Research for Development:

> An estimated 93 percent of the world's burden of preventable mortality (measured as years of potential life lost) occurs in the developing world. Yet, of the $30 billion global investment in health research in 1986, only 5 percent or $1.6 billion was devoted specifically to the health problems of developing countries. For each year of potential life lost in the industrialised world, more than 200 times as much is spent on health research as is spent for each year lost in the developing world.[7]

The magnitude of the inequity, coupled with the prejudice this causes to people's lives, suggests that health research should be a human rights issue of the highest priority.

The thesis of this article is to argue that the right to health, which is recognized in international law, obliges states to readjust their scientific research priorities and funding to address more equitably the diseases of the developing world. The argument is conducted in three parts. First, I consider the legal sources of a right to health and argue that state obligations respecting that right must be construed transnationally, so that the beneficiaries of the right include nationals of foreign states. Second, I discuss a few methods to measure states' compliance with their international obligations respecting health. Third, I apply these methods to query the adequacy of states' research programs and budgets dedicated to diseases of the developing world. I conclude that in managing their scientific research priorities, states give outrageously little consideration to their obligations under international law.

## State Obligations Respecting Health: For Whom?

There is in international law a little-noticed right to health. Neither academics nor states have weighed the right with the consideration it deserves, and accordingly some effort must be spent merely to rescue the right from the obscurity into which it has slid. This is surprising, as the right inhabits some of the best known human rights treaties, and an entire United Nations body, the World Health Organization, is dedicated to the effective and equitable provision of

health, which is in substance the raison d'être of the right.

As with many rights, the right to health is formulated somewhat differently in each of the treaties in which it appears. As a least common denominator, these always declare that a person is entitled to certain fundamentals which are essential to health. In better-developed codifications this entitlement is elaborated on in a normative or quasi-legislative sense, so that it becomes possible to discern not only the bare entitlement, but the cognate obligations that states undertake to realize health rights for all.

The Universal Declaration of Human Rights first articulated a right to health.[8] It reads, at Article 25:

> Everyone has the right to a standard of living adequate for the health and well-being of himself and his family, including food, clothing, housing and medical care and necessary social services. . . .

This language is typical of the Declaration in that it is no more than exhortatory. Notably, it creates a right, appertaining to "everyone," that is not supported by a corresponding governmental obligation of any sort.[9] Despite this omission, the Declaration does have some legal effect as a source of moral authority, and it has been cited approvingly in municipal law.[10] But laudable as that may be, the Declaration lacks the normativity that would answer the question, "What exactly is the right to health, and who is its proponent?" The Declaration merely avers states' aspirations (taken with varying degrees of sincerity) to provide every person with, *inter alia*, a decently endowed, salubrious standard of living. It decidedly does not say that a state will be judged, much less taken to task, for failing to make it so.[11]

The creation of state *obligations* at a global level in any meaningful sense waited nearly another two decades for the codification of the International Covenant on Civil and Political Rights (ICCPR) and the International Covenant on Economic, Social and Cultural Rights (ICESCR).[12,13] It has been accurately said that the Covenants "together legislate essentially what the Universal Declaration had declared."[14] Both are widely subscribed to, and as such the rights they enshrine are at the heart of international human rights law.[15]

The Covenants were created to inject some normativity into the exhortatory rights of the Declaration.[16]

Among the international instruments that create a right to health, the ICESCR contains the most substantive content, in Article 12.[17] That article proclaims the right, establishes a standard to which it will be realized, and lists the steps to be taken by states in its furtherance:

> 12.1. The States Parties to the present Covenant recognize the right of everyone to the enjoyment of the highest attainable standard of physical and mental health.
>
> 12.2. The steps to be taken by the States Parties to the present Covenant to achieve the full realisation of this right shall include those necessary for:
>
> a. The provision for the reduction of the stillbirth-rate and of infant mortality and for the healthy development of the child;
>
> b. The improvement of all aspects of environmental and industrial hygiene;
>
> c. The prevention, treatment and control of epidemic, endemic, occupational and other diseases;
>
> d. The creation of conditions which would assure to all medical service and medical attention in the event of sickness.

This is all striking language, and it must be carefully dissected before considering whether its meaning is consonant with the rest of the ICESCR and the interpretation the ICESCR has elsewhere received.

The Article 12 right is tremendously ambitious in scope. It provides that the right to health inures to "everyone" and that everyone should enjoy the "highest attainable standard" of well-being. No other right in the ICESCR is framed in such superlative language. Article 7, which protects workers' rights, only aspires to creating "just and favourable conditions of work." Even Article 11, which protects rights related to quality of life, aims no higher than "an adequate standard of living . . . including adequate food, clothing and housing."

The top billing that the right to health enjoys in the ICESCR makes sense when one considers the centrality of health to civil society: no state has achieved prosperity and greatness on the backs of an ailing populace. There is a horizontal and mutual relationship between the state of a

citizenry's health and the prosperity of a society or state, and a sickly people are simultaneously causal and symptomatic of an infirm state.[18] The unity of this nexus is recognized by the obligation on states in Article 12.2.c to take preventative steps in addressing disease. It is echoed again in singling out infant and child health for protection in Article 12.2.a—a matter so imperative that a state failing this obligation endangers not so much its social fabric as its fiber.

It is hard to overstate how terribly useful these obligations would be in grappling with real world diseases, if only they were taken seriously by states. Take the case of malaria: It is an endemic scourge of most tropical nations, is rarely fatal except where medical services are grossly inadequate, is lethal to children far more frequently than adults, and is undeniably better prevented than cured. It is therefore tempting to consider what reliance the people of the world, who are the ultimate beneficiaries of a right to health, may place on state obligations.

But where the attainment of obligations necessitates the disposition of a state's carefully husbanded resources, legal questions invariably arise. Two such questions readily come to mind. The first is *to whom* in particular do states owe their ICESCR obligations? States have their allies and foes, and some recipients can be more palatable than others. The second is *to what extent* do these obligations make demands on a state's resources: will the state only have to make certain of its resources available, such as its biomedical research budget, or will it have to marshal every resource it can reasonably muster? The answer to the first question necessitates a wide look at the construction of the ICESCR and the principle of state sovereignty. And the second question, which is less clear-cut, touches on ideas of distributive justice between the South and the North. Both questions are diabolically contentious, and therefore exciting.

## Are States Obliged to Promote Health Abroad?

International law, once a strict "law of states," has in this century grown to accommodate "natural people" as subjects with rights of their own.[19] Yet it remains a live question whether international law can oblige a state to act positively for the benefit of aliens in a different state's territorial juris-

diction. The fulfillment of such transnational obligations seems likely to offend the principle of state sovereignty, and there is an awkward problem in reconciling tensions between these two concerns. The problem comes up, inevitably, in interpreting the scope of state obligations under the ICESCR.

On its face, the ICESCR seems to indicate that states do owe obligations to aliens abroad. Consider Article 2 of the treaty, which discusses, *inter alia*, "international assistance":

> 2.1. Each State Party of the present Covenant undertakes to take steps, individually and through international assistance and cooperation, especially economic and technical, to the maximum of its available resources, with a view to achieving progressively the full realisation of the rights recognized in the present Covenant by all appropriate means, including particularly the adoption of legislative measures.
>
> 2.2. The States Parties to the present Covenant undertake to guarantee that the rights enunciated in the present Covenant will be exercised without discrimination of any kind as to race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status.

The language of "international assistance and co-operation" is not included gratuitously in the ICESCR. It is, rather, a meaningful affirmation that a state must not treat Covenant rights autonomously: in pledging to undertake steps for the "full realization" of Covenant rights, a state is bound to do so both at home and abroad.[20] Where Covenant rights inure to individuals (recall that the Article 12 right to health inures to "everyone"), the undertaking to assist internationally touches on aliens outside a state's jurisdiction. Further support for this interpretation is found in Article 2.2, which equitably levels one's entitlement to Covenant rights irrespective of "national or social origin . . . or other status," notwithstanding that states' abilities to autonomously provide for such rights is anything but level. In all, the ICESCR provides a sound textual basis to conclude that state obligations extend to aliens outside the state's own jurisdiction.

This view is hardly uncontroverted in the international human rights field. Louis Henkin interprets Article 2 as support for the proposition that "the [ICESCR] and other human rights conventions . . . clearly imply that a state's obligations

are to its own inhabitants."[21] Henkin grounds his conclusion on the principle of state sovereignty (or what he calls "the state system"), as this passage illustrates:

> The failure of the international human rights movement to address the responsibility of a state for human rights of persons in other states may reflect only the realities of the state system. States are not ordinarily in a position either to violate or to support the rights of persons in other states. States are reluctant to submit their human rights behavior to scrutiny by other states; states are reluctant to scrutinize the behavior of other states in respect of their own inhabitants; surely, states are reluctant to incur heavy costs for the sake of rights of persons in other countries. . . . Therefore, human rights in another state are not the explicit concern of international human rights law.[22]

All of this seems perfectly accurate: states are, at least in principle, skittish about meddling in one another's affairs. But is the legendary guardedness of states reason enough to vitiate obligations that the ICESCR creates on its face? Henkin admits there can be exceptions that circumvent the state sovereignty problem:

> Another state can help to give effect to some economic-social rights—the right to food, education, *health care* and an adequate standard of living—*without forcible intervention, merely by financial aid to the local government* . . . and, as the Third World has insisted in its campaign for an New International Economic Order . . . wealthy states are therefore morally obligated and should be legally obligated to help the poorer states [emphasis added].[23]

Notably, the exceptions are in the provision of financial aid for promoting health and other aspects of general welfare![24] That states *do* routinely finance foreign projects for those purposes is a trite fact of state practice.[25] For instance, each year donor states plan how much they shall disburse abroad in health aid; this information is then shared with recipient states, who budget that same amount as revenue for their domestic health budgets.[26] With coordinated practices such as this, one could almost be forgiven for thinking that ongoing foreign aid disbursals are not so much *ex gratia*

as tacit acceptance of a duty to assist internationally.

Finally, there may be categories of international assistance even less contentious than foreign aid, because they avoid Henkin's "state system" problem altogether: consider works or projects carried out entirely within a state's own jurisdiction for the benefit of another state. A theoretical example may be if a donor state undertook a research program on a problem of particular interest to a recipient state, so as to aid the latter in the progressive realization of a Covenant right.[27] Provided that such a research program were executed entirely domestically, there could be no question of offending the recipient state's sovereignty.[28]

Because science is a shared endeavor, a *res communis*, it can easily happen that research done in one country may flow to the benefit of another, including, *inter alia*, research aimed at "the prevention, treatment and control of epidemic, endemic, occupational and other diseases."[29] In particular, biomedical and public health research can offer a convenient means for a state to realize the advancement of health rights in another state, consistent with its obligations under the ICESCR. The fruits of such research may include new interventions, such as treatments or prophylactic measures, or improved protocols for delivering existing interventions, for instance by making a treatment more effective or affordable. There is even support within the ICESCR for scientific research to serve such ends: Article 15.1.b enshrines a "right of everyone . . . to enjoy the benefits of scientific progress and its applications." Also, Article 23 mentions that "the furnishing of technical assistance" shall be among the actions states take internationally to achieve Covenant rights. Other UN documents contain similar language.[30]

To summarize, in the contentious question of whether the ICESCR obliges states to progressively realize Covenant rights for aliens outside the state's jurisdiction, the answer is clearly yes, providing that state sovereignty is respected. This is certainly the case where the resources and management employed to meet the international obligation are wholly domestic and located in the donor state. A state's control over its own domestic scientific research program is an example of such a case.

## How Intrusive Will the Fulfillment of ICESCR Obligations Be?

If there is a weakness in the ICESCR on which commentators agree, it is the wording of the so-called "resource phrase" in Article 2.1, which requires that a State Party undertake obligations "to a maximum of its available resources, with a view to achieving progressively . . . the rights recognized in the present Covenant." It is a maddeningly ambiguous phrase, and it unhappily inhabits one of the most important parts of the treaty. One writer has expressed his frustration with it this way:

> It is a difficult phrase—two warring adjectives describing an undefined noun. "Maximum" stands for idealism; "available" stands for reality. "Maximum" is the sword of human rights rhetoric; "available" is the wiggle room for the state.[31]

To which one might properly add, "what is a resource, anyway?" The trouble is that, depending on the meaning one ascribes to the resource phrase, the ICESCR is either a compelling document or a vague paper lion amenable to state evasion.

Treaty language such as the resource phrase does not arise without a reason; indeed, the *travaux préparatoires* reveal a long and baroque struggle in its drafting.[32] Various linguistic interpretations of the resource phrase have been advanced, ranging from the optimistic to the dismissive and even the rabid.[33,34,35] If we are to be pragmatic and judge by what the treaty has wrought since it came into force, then it seems the vagueness of the resource phrase has gone a long way toward paralyzing the treaty. But even that realization need not rob the phrase of its evocation of distributive justice—a result that the drafters of the treaty, speaking through the *travaux*, undoubtedly set out to achieve.[36] To now salvage a workable meaning out of the vagueness would, in fact, give belated effect to the treaty's intentions. How best to do so?

A corollary to there being an eluctable meaning to the phrase is that there must be a practicable way of measuring a state's compliance with its obligations under the treaty. By concentrating on measuring compliance, the meaning of the phrase itself can usefully be brought into focus. After all, of

what utility is a meaning of the phrase that does not enable one to answer whether a state's use of resources is in compliance with the obligation to progressively realize Covenant rights? Any sensible meaning of the phrase surely must lend itself to that task.

Attractive as this sounds, measuring compliance is an onerous task in itself. It is, inevitably, about the state's discretionary use of resources, and states bluster when asked too pointedly to justify their resource use. Nor has the problem of compliance measurement received the attention it deserves from writers.[37] Robert Robertson, who has considered it most thoroughly, believes that compliance monitoring cannot prescribe which resources *are* relevant to the measurement, but can at best suggest which resources, among several, *may be* relevant. He proposes five categories of resources: human, technological, informational, natural, and financial. Robertson argues that compliance measurement must particularize the kinds of resources evaluated to the Covenant right in question, for the reason that the realization of different Covenant rights will present different resource needs. Consequently, compliance measurement requires an exercise of discretion in deciding which kinds of resources are relevant to the Covenant right in question; and it is the sum of resources of the chosen kinds that indicates whether a state is complying with its ICESCR obligations.[38] But this kind of proposal is largely tautologous with the problem of vagueness: there could be endless and paralyzing debate about which resources are germane to compliance measurement and which are extraneous.[39] However sensible Robertson's approach is, it risks merely substituting one sort of disagreement for another.

One solution to this problem is to "read down" and simplify how we measure compliance—and, by extension, the meaning of the phrase itself. Where the *travaux* or academic writers make it clear that some kind of resource is admissible and thus "part of the story" in measuring state compliance, we may try to rely on that kind of resource *exclusively*, making it the whole story. Of course, this will not always be a reasonable simplification, but where it is at least tolerable there will be two practical advantages.[40] First, debate over the kinds of resources relevant to compliance measurement

is done away with. Second, and more importantly, by looking at only a single kind of resource, we systematically underestimate what a wealthy state could contribute in assisting a poorer state to realize its Covenant rights. If it turns out that the wealthy state's contributions are stingy even in the light of this simplification, then the wealthy state would be *prima facie* in default of its ICESCR obligations.[41] Admittedly, this reading-down strategy deprives the ICESCR of its fullest expression and application, but it does clarify the treaty's normative value, and that makes it attractively easy to spot egregious defaulters.

Given the above proposal, it is helpful to consider the discussions on the resource phrase in the *travaux* as an indication of the kinds of resources that may speak to compliance measurement. Surprisingly, delegates from both industrialized and developing countries expressed the opinion that in ascertaining "available resources," it would be permissible to look at, and even beyond, government expenditures and budgets. In the words of the Lebanese delegate, "the reference [to resources] was to the real resources of the country and not to budgetary appropriations."[42] The Chilean delegate said that it would not do for governments to hide behind the fig leaf of minute budgetary allocations. France stated that "resources of a state should be interpreted broadly to include budgetary appropriations and also technical assistance, international co-operation and other elements." In this decade, the Special Rapporteur on the Realization of Economic, Social and Cultural Rights has voiced a similar opinion, as has Robertson.[43,44] It would therefore seem that if we were to confine compliance measurement to financial resources manifested in national budgetary appropriations, we would be safely within the scope of resources that states considered available for the purposes of satisfying their ICESCR obligations.[45] We would have read down the meaning of the resource phrase in a manner that we confidently know to be consistent with the *travaux*. By that rationale, we would aver that in 1990, the industrialized world's available resources for biomedical and clinical research were approximately US$17 billion.[46]

It is difficult to overstate that in adopting budgetary appropriations as an authoritative measure of a state's "avail-

able resources," we are actually giving states tremendous deference. Potentially huge resources in fiscal or human capital are being excused from availability, as are natural resources and less tangible technological or informational resources. Also, we are giving national governments the benefit of the doubt that what they do spend on budget items is as much as they *can* spend.[47] In other words, we are refraining from asking the prying question of whether the budgetary appropriation for any given purpose is, as a quantum, truly "the maximum . . . of available resources" the state has at its disposal for that purpose.[48]

Above all, for the purposes of measuring compliance with a state's international assistance obligations under Article 2 of the ICESCR, we are resolving the linguistic ambiguity of Article 2 to the advantage of the donor state. On that most favorable basis, it becomes feasible to measure and confidently judge donor state compliance with the ICESCR.[49]

## Benchmarking Distributive Justice in Biomedical Research

Once we have elected to judge compliance in the light of public research budgets, the question arises for developed states of how much to fund research benefiting the state's own population, as against research primarily or exclusively benefiting the populations of developing states (herein after "foreign priority research"). In other words, of all that a state spends to realize the right to health, how much shall be spent to realize that right at home, and how much shall be spent to do so in developing countries via research? That, in a nutshell, is the essence of the distributive question.

Robertson has proposed several ways to benchmark domestic progress toward Covenant rights, but has not considered the related issue of distributive fairness and benchmarking progress toward the international realization of Covenant rights.[50] In this section, I will consider some strategies for benchmarking, including both elaborations of Robertson's methods and novel approaches. Where possible, I will apply these strategies to the available data on research funding in diseases of special interest to the developing world.

**Subjective Reasonableness**

One way to measure a state's compliance is to judge the adequacy of its funding on a particular biomedical research problem as against its own recognition of the imperativeness of the problem. In other words, the level of funding allocated to foreign priority research ought to be *commensurate* with a state's *subjective* assessment of the gravity of a situation inimical to the right to health. That assessment may be produced either by the state itself or by another party such as an expert international agency, providing it is endorsed in the result by the state. When the state funds foreign priority research at a level that is unreasonably low in the light of its own assessment of the gravity of a threat to health, it is unlikely to be meeting its ICESCR obligations.

The AIDS crisis provides an example. Nobody doubts the severity of the AIDS problem, and for good reason. Some of the numbers are staggering. A disease unknown before 1981 became, by 1990, the 28th most serious contributor globally to preventable death and disease. This conflagration of accelerating infectivity is expected to continue until sometime early in the next decade, when the incidence of HIV infection is expected to drop. By that time, AIDS will probably be among the top 10 causes of death and disability. It will probably still be in the top 10 in 2020.[51] It blights industrialized and developing countries alike. In the United States, AIDS is the leading cause of death among those between the ages of 25 and 44, and in Uganda, as much as 8% of the population may be HIV-positive, explaining why in many parts of the country AIDS is the most common cause of hospital admissions and deaths.[52,53]

In view of all that, it is unsurprising that states count AIDS among their paramount public health concerns. That is evidenced by the lavish funding developed states give AIDS research programs in relation to the present-day incidence of the disease. Indeed, one can be forgiven for supposing that funding bodies may be overreacting to AIDS. Robert Livingston, chair of the Appropriations Committee of the U.S. House of Representatives, has said, "We spend $295 per patient on cancer research, $93 on heart disease, $54 on Alzheimer's, $26 on Parkinson's—and $36,000 per AIDS patient on research."[54] AIDS research has been, and remains, a

colossal endeavor in several countries.[55] As a result, we now understand the fundamental biology of HIV better than that of any other virus. We have made great progress in slowing the progress of the disease, perhaps even indefinitely, by so-called multidrug treatment.[56] But even in the midst of such tremendous successes and abundant funding, the needs of developing states are being egregiously ignored.

What must be appreciated is that the AIDS problem in the developing world is both quantitatively and qualitatively different from that of the developed world. In quantity, it is tremendously more severe. Estimates vary, but a recent UNAIDS estimate is typical in concluding that "of the 21 million people infected with HIV around the world, 94% live in developing countries."[57] In quality, the problem is genetically distinct, and different viral subtypes are prevalent in different parts of the world. An HIV-positive African, for instance, is unlikely to carry a virus of the same subtype as that afflicting a North American patient.[58] These different subtypes possess certain unique immunological properties. As a result, it probably will be necessary to research the basic immunology and molecular genetics of the particular subtype for which one ultimately hopes to produce a vaccine.[59] Research aimed at developing a North American vaccine, while advancing the field as a whole, is by no means assured to bring us nearer to a vaccine suitable for Africa.

When the AIDS problem of the developing world is correctly recognized as distinct, necessitating research in its own right, the research priorities of developed countries appear parsimonious almost beyond belief. Multidrug treatment, the much hyped development of the 1996 International Conference on AIDS, is now a richly-funded, booming topic of research.[60] It is also an enterprise of zero usefulness to the developing world.[61] A multidrug "cocktail" of three anti-HIV pharmaceuticals costs about $15,000 per year—many times the per capita GDP of developing nations![62] For that reason, a fonder wish of developing states is that a HIV vaccine will soon be developed that can help them. But that is unlikely for the foregoing reasons, despite increases to AIDS research funding and a proclamation by U.S. Secretary of Health and Human Services Donna Shalala that "We will never give up our fight to develop [an HIV] vaccine."[63] In the U.S., a modest

8% of the country's AIDS research budget, or $116 million, was allocated to vaccine research in 1996.[64] What is worse, very little of that amount is spent researching vaccines for the HIV subtypes that prevail in the developing world. The former director of the Rockefeller Foundation's International AIDS Vaccine Initiative estimates that only about $5 million per year is spent worldwide to develop HIV vaccines for the developing world.[65]

Research funding as petty as that speaks to a systematic and near total neglect by industrialized states for a paramount research priority of developing states. In the face of vast AIDS research budgets, it is an insult to the value of lives in the developing world. It must be recalled that the developing world lacks the technical ability of industrial states; consequently, it is morally reprehensible to neglect their vaccine research needs—an omission they cannot possibly address on their own.[66] In the light of a worsening AIDS crisis in the developing world, the severity of which industrialized states do not dispute, there can be no question that the right to health is not being progressively realized as the ICESCR requires.[67,68] The blithe acceptance of that situation by industrialized states is nothing less than a callous violation of international law, and it deserves to be so condemned.

**Contextual Comparison**

Robertson proposes the possibility of measuring compliance by making comparisons among the expenditures of states. Although comparisons of this kind are not conclusive of (non)compliance with ICESCR obligations, they can still furnish useful indices. Consider the method in Robertson's words:

> [W]hat seems reasonable are comparisons between certain countries. . . . For example, if developed countries with comparable economies are spending different amounts on realizing ICESCR rights, then that is indicative, in the case of the low-spender, of non-compliance with Article 2. . . . This is not to say the high spenders are in compliance. It simply means that by one indicator the low spender is not.[69]

This approach lends itself very neatly to an analysis of malaria research funding. Malaria is a particularly instruc-

tive example for the reason that, unlike AIDS, it is essentially a disease of developing states only, and every dollar developed states spend on malaria research is thus for the benefit of developing states only.[70] In other words, research on malaria is *prima facie* foreign priority research.

The magnitude of the malaria problem is hard to exaggerate. The numbers speak to a disease of tragic and staggering presence:

> [Malaria] threatens 40 percent of the world's population—2400 million people—in more than 90 countries. It causes an estimated 300–500 million clinical cases and 1.5–2.7 million deaths per year. If these figures aren't worrying enough, incidences of the disease are on the increase.[71]

To that, add the cruelty that malaria hits the poorest of poor states, those of sub-Saharan Africa, disproportionately. Over 90% of worldwide cases are African. There, the disease tends to coincide seasonally with harvest time, sapping human strength just when villagers most need it to secure their economic well being. Malaria also assails the weakest: children are much more vulnerable than adults. The disease will kill one African child in 20 before the fifth year and is the cause of about a million childhood deaths annually.[72,73] To imagine such a number, envision seven jumbo jets, full of children, crashing *every day*.

Notwithstanding these facts, the developed world has not taken up malaria research with anything resembling enthusiasm. Though malaria in sub-Saharan Africa alone destroys 76% more years of productive life than do *all* cancers in *all* economically developed countries, worldwide funding for malaria research in 1993 was approximately $84 million, or only about $42 per fatal case—a pittance, as some have called it.[74,75,76] And in recent years, as the global incidence of malaria has worsened considerably, some states' funding has stood still or backslid.[77] Other states support only token research investment. Not a single state today has increased its funding other than incrementally.

The U.S. provides an example of backsliding. Although it remains the single largest supporter of malaria research, it nearly halved its research funding between 1985 and 1994, from about $65 million to $35 million.[78] This is true despite

large and ongoing increases in real terms in the budgets of NIAID and the health program of USAID.[79] A recent and much-touted funding increase for malaria research and control at USAID still leaves that agency with less funding than it had in the 1980s.[80] At this writing, antimalarial drug and vaccine development programs at the U.S. Department of Defense are threatened with downsizing, an incalculably stupid gesture at a time when experts anxiously proclaim "a looming crisis [of] multidrug-resistant malaria with no safe, effective alternatives for treatment."[81,82] Even so, researchers are optimistic about recent advances in understanding the malaria parasite's genetics and epidemiology.[83] To sum up, in a period of growing national research budgets, worsening disease mortality and morbidity, and optimism among researchers, the U.S. has in recent years turned its back on malaria funding.

In the U.K., by comparison, public sector malaria research funding has nearly stood still.[84] From 1983 to 1994, such funding comprised approximately 1.5% of the budget of the Medical Research Council, for a total expenditure of about $6 million in 1994. The U.K. overseas development agency, the Department for International Development (DFID), contributed roughly another $3.2 million.[85] The British contribution, while insufficient, seems to at least reflect a continuity of interest.[86]

It is hardly comforting that, between them, the American and British governments account for about 60% of the global total spent on malaria by the public and charitable sectors. Multilateral agencies and charitable foundations account for most of the balance.[87] Other states' contributions are truly small. Including funds distributed via multilateral agencies, Australia funds about $2.8 million of research a year, Canada about $3 million, and France about $3.3 million.[88]

It is abundantly clear that no state is overly lavish in funding malaria research. The "good" are distinguishable from the "wicked" only by virtue of not having backslid on what was a petty contribution in the first place. To insist on nominating one state as exemplary, for the purpose of setting a benchmark by which to compare other states, is rather like singling out one of Snow White's seven dwarves for praise as the tallest. In this case, the comparative method proposed by

Robertson is not terribly informative, except to illustrate that among biomedical research priorities, malaria occupies a shamefully low rank. The Wellcome Trust reports:

> [I]t is clear that funding for [malaria research] is very low in comparison with other major disease areas. . . . [R]esearch investment per fatal case is about 80 times greater for HIV/AIDS, and 20 times greater for asthma than it is for malaria.[89]

Given the ready availability of research funds for AIDS and asthma, but not for a matter *exclusively* of foreign priority research, it is impossible that, as far as malaria is concerned, the Covenant right to health is being progressively realized sufficiently by *any* state.[90]

## Decision-Making

The foregoing examples illustrate that states can and often do arrive at funding decisions that fail to effectuate their obligation to realize Covenant rights. These failures may arise either independently or as the result of systematic lacunae in the allocation of research funding. The interesting question therefore arises of whether the process by which research funding decisions are made takes account of a state's ICESCR obligations. A decision-making process that gives weight to ICESCR obligations is, at very least, indicative of a state's willingness to progressively realize Covenant rights, if not quite a measure of compliance.

To answer this, it is necessary to relate in rough sketch the process by which scientific research comes to be publicly funded.[91] The process begins when a scientist writes a project proposal comprising the subject and goal of the research to be undertaken, the experimental strategies that will be used to reach the goal, and a budget for the human and technical resources that will be required. The scientist then submits the proposal as the central part of an larger application to the appropriate research program(s) of the state funding body. The proposal undergoes peer review, a process by which scientists expert in the field consider the proposal's merit along with competing proposals and award a rating accordingly. In general, only proposals which are judged scientifically and ethically sound, technically feasible, responsive to the trends

in the field, and consonant with the mandate of the research program garner a favorable rating and become eligible for funds. The separation of the rating decision from the disbursal decision can produce harsh results. Competing demands from other highly rated proposals generally mean that projects must be funded at a level less than that requested by the researcher—and that is true for the lucky ones. It is not at all uncommon for outstanding, "alpha-rated" projects to go entirely unfunded.

In a scheme such as this, it would be quite feasible to introduce a requirement that ICESCR obligations be considered as one factor in the making of the funding decision. The most far-reaching (but most costly) way to institute this change would be for states to create and endow dedicated research programs, aimed exclusively or primarily at funding foreign priority research. If funds were earmarked in this way, it would give scientists a powerful incentive to propose new projects or reorient existing ones in order to become eligible for the funds. Rather automatically, scientists would become allied to the state's endeavors in realizing ICESCR obligations abroad or, for that matter, domestically.

At present, where dedicated research programs exist, they are overwhelmingly dedicated to research problems of the developed world, an imbalance that mirrors the overall scarcity of funds for foreign priority research. A search of the Wellcome Trust's *Sources of Biomedical Research Funding* database reveals that of 33 programs administered by the British Government Research Councils, only one is dedicated to tropical medicine research.[92] Perhaps the other programs fund tropical medicine research from time to time, but they do not invite such applications expressly. By comparison, 29 of the 33 programs specifically invite applications for cancer research, and 25 programs do so for cardiovascular research.

Apart from establishing new research programs, states could adapt existing programs to become more "ICESCR-friendly" merely by changing the application instructions given scientists and the corresponding evaluation instructions given peer review committees. Such changes could be made at virtually no marginal cost. If scientists were asked, *inter alia*, to comment on how their proposed research may be relevant to health in the developing world, project proposals

would necessarily be conceived with this objective in mind. Similarly, if peer review committees were informed that the state is under an international legal obligation to promote health in developing countries that are party to the ICESCR, and were instructed to weigh this obligation as a criterion in rating proposals, then funding decisions would to a degree gravitate toward supporting foreign priority research. Adopting such instructions would require no more than an extra one or two paragraphs of print per application and a few moments of deliberation on the part of the peer review committee.[93]

It is difficult to say whether such instructions are presently in use at national research councils.[94] Given the notable dearth of enthusiasm that scientists and human rights lawyers muster for one another's work, it seems unlikely.[95] According to Dr. John Evans, who chaired the Commission on Health Research for Development during the preparation of its 1990 report on the equity of health research, instructions of this kind are rare to nonexistent.[96] It is striking that Dr. Evans recalls no occasion on which a state presented evidence to the Commission showing that ICESCR obligations were among the criteria used to guide national research priorities. Rather, the Commission was frequently told that the availability of funding was entirely merit-driven: if applicants put forward good and appropriate research proposals, the state would fund them.[97] Such a passive approach evinces a weak hand in guiding science policy and orienting the state's research priorities, not to mention a feeble commitment to the state's international responsibilities. Yet it seems to be the rule among states, and perhaps worse, a rule in which their scientific establishments take pride.

Few unequivocal conclusions can be drawn about the decision-making processes of research funding in relation to state compliance with the ICESCR. The processes are not entirely transparent, especially at the peer review stage, and little information is available apart from the merely anecdotal. Yet even with so little to go on, it seems that the inequity of biomedical research is institutionally rooted, and that reform is needed in the processes by which funding bodies design research programs, solicit research proposals, and conduct peer reviews.

If states are to begin to fulfill their ICESCR obligations and animate the moribund right to health, it is in the halls of their science ministries that the work should begin. Sometimes working for change in the most unlikely places can bring profound results. The challenge for international human rights lawyers must be to throw their voices into the alien territory and culture of science to motivate that change.

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## References

**1.** World Bank, *World Development Report 1993: Investing in Health* (Oxford: Oxford University Press, 1993), pp. 200–201.

**2.** For percentage, see World Bank (note 1), pp. 208–9. For measles prevalence, see Paul Basch, *Textbook of International Health* (Oxford: Oxford University Press, 1990), p. 175.

**3.** World Bank (see note 1), pp. 208 and 222.

**4.** World Bank (see note 1), pp. 200–201.

**5.** World Bank (see note 1), pp. 200–201.

**6.** Consider the fact, already mentioned, that Britain's incidence of measles dropped by over 99% before any vaccination program was instituted. Qualitatively the same is true of tuberculosis and many other infectious diseases. It is quite true that not all gains in human health are achieved by the scientific conquest of the disease agent, but that economic development, properly moderated to avoid its worst excesses, can be of great importance in mitigating disease causes. See Richard Lewontin, *Biology as Ideology: The Doctrine of DNA* (Concord, Ontario: Anansi Press, 1991), pp. 39–57.

**7.** Commission on Health Research for Development, *Health Research: Essential Link to Equity in Development* (Oxford: Oxford University Press, 1990), p. 29.

**8.** The Universal Declaration is the well-known core of the International Bill of Human Rights, G.A. Res. 217A(III), UN GAOR, 3rd Sess., Supp. No. 1, at 71, UN Doc. A/811 (1948).

**9.** The Declaration is an example of what is known as "soft law." In the words of Gunther Handl, soft law takes in "international prescriptions that are deemed to lack requisite characteristics of international normativity, but which, notwithstanding this fact, are capable of producing certain legal effects." See Handl et al. (panel discussion), "A Hard Look at Soft Law," *American Journal of International Law Proceedings* 1988, 82: 371.

**10.** In Canada, see, for instance, R. v Miller, 2 SCR 680 (1977); Ontario (Human Rights Commission) v Etobicoke, 1 SCR 202 (1982); and Reference Re. Public Service Employee Relations Act, 1 SCR 313 (1987). In the U.S., see Boehm v Superior Court, 223 Cal Rptr 716 (Ct App 1986); other U.S. examples are given in C. de la Vega, "Protecting Economic, Social and Cultural Rights," *Whittier Law Review* 1994, 15: 471. For a global view, see also Measures Taken within the United Nations in the Field of Human Rights, UN Doc. A/CONF/52/5, at 28–30.

**11.** States were clearly anxious to be bound no further than this by the Universal Declaration. Even Ms. Eleanor Roosevelt, the U.S. representative and chair of the Drafting Committee, and one of its most vocal supporters, declared that it "does not purport to be a statement of law or of legal obligation . . . [but rather] a common standard of achievement for all peoples of all nations." See *U.S. Department of State Bulletin* 1948, 19: 751.

**12.** G.A. Resolution 2200, UN GAOR, 21st Sess., Supp. No. 16, at 52, UN Doc. A/6316 (1966); *American Journal of International Law* 61 (1967): 870. The ICCPR entered force on March 23, 1976. Canada acceded without reservation or special interpretation on May 19, 1976. As of February 1999, there were 144 States parties to the convention.

**13.** G.A. Resolution 2200, UN GAOR, 21st Sess., Supp. No. 16, at 49; UN Doc. A/6316 (1966); *International Legal Materials* 6 (1967): 360. The ICESCR entered force on January 3, 1976. Canada acceded as for the ICCPR (see note 12). The web site of the United Nations High Commissioner for Human Rights lists, as of February 1999, 141 States parties: http://www.unhchr.ch/tbs/doc.nsf.

**14.** Louis Henkin, *The Age of Rights* (New York: Columbia University Press, 1990), p. 20.

**15.** A notable exception is that the United States has not ratified the ICESCR.

**16.** In fact, for the ICCPR, certain of these rights may be justiciable. By the 1966 Optional Protocol of the ICCPR, states (including Canada) recognized the locus standi of private applicants to prosecute by petition violations of the ICCPR: see *American Journal of International Law* 1967, 61: 887. Unfortunately, no analogous mechanism exists for the ICESCR. The Committee for Economic, Social and Cultural Rights, the treaty's supervisory body, has mooted the possibility of an optional protocol but has declined to press for it: see CESCR Report, ESCOR, Supp. 3, p. 69 (1990). The at-large justification for not doing so is that the economic rights in the ICESCR are "secondary" to the civil rights of the ICCPR. For a refutation of that view see A. Vierdag, "The Legal Nature of the Rights Granted by the International Covenant on Economic, Social and Cultural Rights," *Netherlands Yearbook of International Law* 1978, 9: 69.

**17.** Although more recent conventions on women and children, as well as the Alma-Ata Declaration, have elaborated the right to health with more precision, the normative language in the ICESCR, establishing an obligation on the part of signatories, is by far the strongest.
**18.** This is a tenet of international public health, and the literature is replete with examples of the linkage between economic ascendancy and public health. Generally, as a state's wealth increases, so does the health of its citizens. Conversely, preventable illness among its citizens can result in so great a cost to the state that economic development virtually ceases. For an excellent, and sometimes stunning, empirical account of these relationships, see the introductory chapters of Basch (note 2).
**19.** Lauterpacht believes this was decided early on by the PCIJ Advisory Opinion in *Polish Postal Service in Danzig*, PCIJ Rep., Ser. B, No. 11 (1925). In his words, "There is nothing in international law to prevent individuals from acquiring directly rights under a treaty provided that this is the intention of the contracting parties": see H. Lauterpacht, Memorandum prepared for the UN Secretariat, UN Doc. A/CN.4/1/Rev. 1 (Feb 10, 1949), at para. 28. It has since been reaffirmed that the violation of a person's treaty rights is not only a valid matter for international law, but may even be an internationally criminal act: see "Charter of the Nürenberg Tribunal," *American Journal of International Law* 1947, 41: 221 and 224.
**20.** The *travaux préparatoires* show the choice of the phrase "undertakes to take steps" to be an artful compromise between ambitious and dilatory language. This is recounted by Alston and Quinn, whose own views are that "While . . . less demanding than a guarantee . . . the Covenant imposes an immediate and readily identifiable obligation upon States parties." See P. Alston and G. Quinn, "The Nature and Scope of States Parties' Obligations under the International Covenant on Economic, Social and Cultural Rights," *Human Rights Quarterly* 1987, 9: 165–66.
**21.** Henkin (see note 14), p. 44. Incredibly, Henkin argues this proposition notwithstanding that in the preceding sentence, he quotes the differing language of the preamble of the ICCPR, in which a state undertakes to recognize rights of "all individuals within its territory and subject to its jurisdiction." One could just as easily conclude that the dissimilar language signifies a different ambit of obligations in the ICCPR and ICESCR, the latter's being broader.
**22.** Henkin (see note 14), p. 44.
**23.** Henkin (see note 14), pp. 45–46. The same point of view is taken by the Committee on Economic, Social, and Cultural Rights. General Comment No. 3 of the Committee says, at paragraph 14, that "in accordance with . . . well-established principles of international law, and with the provisions of the Covenant itself, international cooperation for development and thus for the realization of economic, social and cultural rights is an obligation of all States. It is particularly incumbent on those States which are in a position to assist others in this regard." See M. Craven, *The International Covenant on Economic, Social, and Cultural Rights: A Perspective on its Development* (Oxford: Oxford University Press, 1995), p. 376.
**24.** This has been overlooked by others reading Article 12 in the light of Henkin; see A. L. Taylor, "Making WHO Work," *American Journal of*

*Law and Medicine* 1992, 18: 311.

**25.** Another equally trite fact is that they meddle in one another's affairs anyway, and by far less excusable or honorable means. As Henkin says, "Every country has at one time or another made human rights in some other country its own business, and has thereby accepted that human rights at home are someone else's business" (see note 14, p. 29).

**26.** An account of the typical flows from donor to recipient countries is given in World Bank (see note 1), pp. 165–71.

**27.** This proposal is consistent with paragraph 33 of the *Limburg Principles*, an interpretative guide to the ICESCR prepared by an academic panel under ECOSOC auspices. That paragraph reads: "International cooperation and assistance shall be based on the sovereign equality of states and be aimed at the realization of the rights contained in the Covenant." See *The Limburg Principles on the Implementation of the International Covenant on Economic, Social and Cultural Rights*, UN Doc. E/CN.4/1987/17, Annex; *Human Rights Quarterly* 1987, 9: 122.

**28.** Of course, if the research program were not executed entirely domestically but included a foreign component (say, for research in the field), that need not offend state sovereignty, providing that the foreign component were executed with the clear consent of the recipient state.

**29.** ICESCR, Article 12.2.c.

**30.** "Developed countries should increase substantially and progressively [throughout the 1980s] the proportion of their research and development expenditure and efforts to be devoted to the solution of jointly identified specific problems of prime importance to developing countries. . . . " *Progressive Development of the Principles and Norms of International Law Relating to the New International Economic Order: Analytical Papers and Analysis of Texts of Relevant Instruments*, G.A. Res. 35/36, UN Doc. A/35/48 (1980), sect. G, para. 120; cited in UNITAR/DS/5 (1982), p. 471.

The former UN Secretary-General has similarly argued that to improve access of developing countries to science and technology, there is "[a] positive obligation of *assistance* on and by developed countries and international organizations to developing countries . . . [to devote] more R and D activities by developed countries to developing countries with a view to developing, preferably in cooperation with the latter countries, appropriate technological solutions to these problems." See *Progressive Development of the Principles and Norms of International Law Relating to the New International Economic Order: Report of the Secretary General*, G.A., Sess. 39, at 86, UN Doc. A/39/504/Add. 1 (1984).

**31.** R. Robertson, "Measuring State Compliance with the Obligation to Devote the 'Maximum Available Resources' to Realizing Economic, Social, and Cultural Rights," *Human Rights Quarterly* 1994, 16: 693.

**32.** The contemptible birth of the phrase is related very ably in a review of the *travaux* by Alston and Quinn (see note 20), p. 177.

**33.** The Australian representative, Mr. Whitlam, believed the resource phrase "undoubtedly raised difficult questions, but [its] use could in no way be considered as an attempt to make it easier for States to evade their responsibilities." See UN Doc. E/CN.4/SR.233 (1951), p. 15.

**34.** The Restatement of the Foreign Relations Law (Third) of the United States has this to say: "Since there is no definition or standard in the

Covenant, the United States would largely determine for itself the meaning of 'full realization' and the speed of realization, and whether it is using 'the maximum of its available resources' for this purpose." See American Law Institute, 1987, at §701, reporters' note 8.

**35.** The opinion arose before the U.S. Senate that the ICESCR's treatment of resources "is largely the historical product of the Marxist ideology espoused by the Soviet bloc, coupled with the non-communist world's post-war infatuation with various forms of democratic socialism." Cited in H. Steiner and D. Vagts, *Transnational Legal Problems*, 3rd ed. (Mineola, NY: Foundation Press, 1987), p. 693.

**36.** Eleanor Roosevelt (U.S.) commented that available resources "included resources other than those of the country immediately concerned [i.e., the recipient country]." See UN Doc. E/CN.4/SR.236 (1951), at 25. Mr. Hoare (U.K.) observed that the phrase "actually implied a heavier obligation for the fully developed, and a lighter one for the under-developed, countries." See UN Doc. E/CN.4/SR.274 (1952), p. 5.

**37.** I am making a distinction here between compliance *measurement*, which is usually a quantitative exercise of weighing up a state's actions in fulfilment of Covenant rights, and compliance *monitoring*, which is the administrative process by which compliance is measured. For a discussion of monitoring mechanisms, see P. Harvey, *Yale Journal of International Law* 1987, 12: 396.

**38.** Some kinds of resources will be more important than others, so a weighing exercise must take place. No doubt this is correct, for it is unlikely that any one set of "core" resource statistics could be indicative of compliance with all manner of Covenant rights. See Robertson (note 3), pp. 703–13.

**39.** Such differences of opinion are evidenced by the heterogeneous content of compliance reports that States Parties file with CESCR for their self-assessments, pursuant to the monitoring mechanism of Articles 16 through 23. This causes difficulties in assessing compliance, either singly or comparatively. See A. Mower, *International Cooperation for Social Justice: Global and Regional Protection of Economic/Social Rights* (Westport, CT: Greenwood Press, 1985), pp. 36–52.

**40.** How reasonable the simplification is depends on whether the other kinds of resources, which we neglect in our compliance measurement, can be crudely deemed negligible. This determination, echoing Robertson, depends on the right in question. For instance, realizing the right to unionize (Article 8 of the ICESCR) probably takes significant human resources, no natural or technological resources, and modest informational and financial resources. It is crude, but not wholly unreasonable, to dismiss the latter two as negligible. Query, however, whether the breakdown of resource demands to realize a given right may not in fact change depending on which state is trying to realize the right, and whether it is doing so for its own nationals or those of another state.

**41.** The only plausible way the wealthy state could nevertheless be in compliance is if it were lavish in making available a different kind of resource, other than the one chosen for compliance measurement, for the realization of a Covenant right. In assessing that defense, it would be proper to price out the value of that different resource in market terms and credit

it in lieu of or in addition to the resource of choice in the compliance measurement. The question of sufficiency could then be posed a second time following that adjustment.

**42.** In particular, see the discussion in Alston and Quinn (note 20), part II(A), and UN Doc. E/CN.4/SR.271 (1952), from which the quotes in this paragraph are excerpted.

**43.** "Much can be derived about a State's maximum available resources and the measures taken to progressively fulfill them if indicators concerning central government expenditure and revenue, balance of payments, development assistance and external debt are considered in such analyses." See *The New International Economic Order and the Promotion of Human Rights: Realisation of Economic, Social and Cultural Rights,* progress report prepared by Danilo Türk, Special Rapporteur, UN Doc. E/CN.4/Sub.2/1990/19 (1990), at para. 48.

**44.** "The predominant view has always been that availability of resources cannot be analysed by looking only at government expenditures." See Robertson (note 3), p. 698.

**45.** Indeed, the U.S. delegate to the negotiations, Eleanor Roosevelt, proposed an amendment that would have added to the resource phrase: "the maximum of its available resources *for the purpose* [amendment text in italics]." Such an amendment would have codified effectively the same "reading down" that I am proposing here. The proposal was powerfully rejected by most of the delegates who spoke to it, and the U.S. chose to retract the proposal rather than subject the amendment to a vote and certain defeat. See UN Docs. E/CN.4/L.54/Rev.1 (1952) [U.S. proposal], at 3; E/CN.4/SR.271 (1952) [Chilean objection], at 4 and 13; E/CN.4/SR.271 (1952) at 6 [French objection]; and E/CN.4/L.54/Rev.2 (1952) [U.S. retraction].

**46.** Commission on Health Research for Development (see note 7), p. 29. The actual amount spent that year on such research, including private sector expenditure, was nearer to $30 billion. Since not all industrialized countries are parties to the ICESCR (the U.S. is the most notable holdout), these figures somewhat overstate the resources available for ICESCR purposes. Unfortunately, there have been no follow-up studies on this topic since 1990.

**47.** Admittedly, as any government burdened with deficit spending knows, budgetary appropriations are sometimes passed regardless of the capacity of the state to meet the costs through taxation. But just as the compliance measurement scheme I advocate here does not require governments to be too astute in ferreting out all their available resources, neither should governments be too astute in pleading their deficits as a totem of impecuniosity.

**48.** It must be remembered that such a deferential approach is not what States parties intended in drafting the treaty; it is a consequence of reading down the resource phrase so as to ensure unequivocally that it is not being interpreted with a stringency greater than what States parties intended. If anything, reading down leads us to adopt an interpretation weaker than what was thought reasonable at the time. Mr. Santa Cruz, the Chilean delegate, objected to the resource phrase because it "provided for various limitations on the undertakings of States under the Covenant, limita-

tions which would render illusory the rights set out in the Covenant. Thus the expression 'to the maximum of [its] available resources' could, in the absence of closer definition, be interpreted as applying only to the resources of States available for that particular purpose, and not their overall resources" (see note 45).

**49.** This is not to say that there is not an issue in judging the compliance of non-donor developing states. There certainly is, but it is not within the ambit of this article.

**50.** See Robertson (note 3), at 709–13.

**51.** The severity of disease is difficult to measure comparatively, as it is necessary to take into account both disability of the ill and premature death. The Disability-Adjusted Life Year (DALY) has been introduced for this purpose and is in common use by WHO, World Bank, and UNEP, among others. The comparison of AIDS as against other kinds of illness is a comparison of DALYs; see C. J. L. Murray and A. Lopez, "Evidence-Based Health Policy: Lessons from the Global Burden of Disease Study," Science 1996, 274(5288): 740.

**52.** M. Pines, "Can AIDS Be Tamed?" in: *A Report from the Howard Hughes Medical Institute: The Race Against Lethal Microbes* (Chevy Chase, MD: Howard Hughes Medical Institute, 1996), p. 49.

**53.** World Bank (see note 1), p. 104. Percentage of population infected by HIV is calculated from the data given on p. 104 and the mid-1991 population of Uganda given in Table 1, "Basic Indicators," p. 238.

**54.** Quoted in Pines (see note 52), pp. 49–50. (Although it is not in the text, the arithmetic can be done to establish that Rep. Livingston's figures are dollars spent on research per *American* patient.)

**55.** In the U.S., the Clinton administration has requested for FY1999 $1.73 billion for AIDS research within the NIH budget. That amount is 246% of the amount spent to research all other infectious and allergic diseases combined by the National Institute of Allergy and Infectious Disease (NIAID)! If one were to add in AIDS research spending at the Department of Defense, USAID, and the Centers for Disease Control, this share would certainly be larger still. See the FY1999 budget request statements of Dr. Jack Whitescarver, Acting Director of the Office of AIDS Research, and Dr. Anthony Fauci, Director of NIAID, before the Senate Subcommittee on Labor-HHS-Education Appropriations.

In the U.K., AIDS spending at the Medical Research Council is much more moderate. In 1995/96 (the most recent year for which data are available), grants for AIDS research totalled £14 million. This is about equal to grant support for cancer (£13.2 m in 1994–95). But even though the MRC is, proportionately, probably the world's most generous funder of malaria research, AIDS grants are nonetheless still 585% of malaria grants (£2.39 m in 1995–96). Personal communication from A. Martinez-Townsend, MRC Public Communication office.

**56.** Pines (see note 52), pp. 46–49.

**57.** Cited in T. Groves, "SatelLife: Getting Relevant Information to the Developing World," British Medical Journal 1996, 313(7072): 1606. Estimates from WHO and UNAIDS show that infection prevalence in sub-Saharan Africa is now 7.4% of the adult population. See UNAIDS/WHO, *Report on the Global HIV/AIDS Epidemic* (Geneva: UNAIDS/WHO, 1997).

**58.** S. Osmanov, W. L. Heyward, and J. Esparza, "HIV-1 Genetic Variability: Implications for the Development of HIV Vaccines," in: G. Giraldo and D. P. Bolognesi (eds), *Development and Applications of Vaccines and Gene Therapy in AIDS* (Basel: Karger, 1996).
**59.** "The Profits and Losses of AIDS," *The Economist*, 13 July 1996, p. 85. For a scientific review, see B. F. Haynes, "HIV Vaccines: Where We Are and Where We Are Going," *Lancet* 1996, 348(9032): 933. The concern over biogeographical uniqueness of viral subtypes is already borne out by simian vaccine trials, which, although protective of the parent subtype, fail to cross-react with other subtypes. See M. Girard et al., "Failure of a Human Immunodeficiency Virus Type 1 (HIV-1) Subtype B-Derived Vaccine to Prevent Infection of Chimpanzees by an HIV-1 Subtype E Strain," *Journal of Virology* 1996, 70(11): 8229.
**60.** One glossily-promoted researcher on multidrug treatment, Dr. David Ho, was honored by *Time* magazine as its "Man of the Year," notwithstanding that no more than 6% of HIV patients (who are, coincidentally, overwhelmingly residents of the developed world) stand to benefit from the work. Some current and future research is summarized in Pines (see note 52), pp. 46–53.
**61.** The 1998 World AIDS Conference with its feel-good theme of "Bridging the Gap" would more truthfully be called "Here's That Familiar Gap Again." As in past years, researchers from developed countries reported on ever finer refinements of multidrug therapeutic protocols against the disease agent; but those from the developing world largely talk about what poor countries can do *despite* the causes of disease, which is a given. As one abstract from Zambia (D. Chipanta et al., #12434) plaintively ended, "People living with HIV/AIDS can still be kept healthy in Africa through the promotion of positive living lifestyles and the prompt treatment and diagnosis of opportunistic infections. This does not, however, mean that anti-retrovirals are not needed in Africa. It just means that Africa can still do something with its few resources to keep its population healthy."

To draw on Lewontin's ideas (see note 6), while the First World tinkers with the biological agents, the Third World does its best to not be consumed by the causes of the disease. And that is all they can do, because drugs against the disease agent remain stratospherically expensive. Anyone interpreting this state of affairs as "Bridging The Gap" has risen to an Orwellian degree of self-deception.
**62.** See "Poor nations blast lack of vaccine," *AIDS Weekly Plus*, 22 July 1996, 24. The developing countries are roughly equivalent to the IBRD's low- and middle-income economies, which in 1991 had a GNP per capita of $1010. See World Bank (note 1), pp. xi and 199 (Table A.2).
**63.** Plenary Address, 11th International Conference on AIDS, Vancouver, Canada, July 9, 1996. Available at http://www.hhs.gov/news/speeches/vanplen.html.
**64.** Absolute amount from "Poor nations blast lack of vaccine" (see note 62), p. 24. Percentage from "The Profits and Losses of AIDS," *The Economist*, 13 July 1996, p. 85.
**65.** Seth Berkley. See "Poor nations blast lack of vaccine" (note 62), p. 24.
**66.** As Peter Piot, the director of UNAIDS, put it in a paper he coauthored, "With more than 90% of all new HIV infections occurring in developing

countries, these countries are in desperate need of better prevention methods, including a safe and effective HIV vaccine. However, the financial resources, the pharmaceutical industrial base, and most of the know-how and human resources needed to develop HIV vaccines are located in industrialized countries." See J. Esparza and P. Piot, HIV Vaccine Development: UNAIDS Perspectives, presented at the meeting "HIV Vaccines for South-East and South Asia: The Challenges and Opportunities," Bangkok, 17–19 January 1996. Available from http://www.us.unaids.org/highband/document/vaccines/paper3.html.

**67.** As any traveler from the developing world required to show a negative HIV test result to an immigration officer of a developed state can attest, the severity problem is not entirely outside the developed states' notice.

**68.** In fact, one study holds that AIDS will shear six years off life expectancy in sub-Saharan Africa by 2010. See World Bank (note 1), p. 33.

**69.** Robertson (see note 31), p. 711. The second test seeks to compare ICESCR-related spending to spending on something outside the ICESCR, such as military ordnance.

**70.** This is not strictly correct, as there is some domestic interest in funding malaria research. For instance, although malaria causes very little illness in the developed world (the World Bank cites a nominal zero DALYs lost annually), it sometimes afflicts travellers returning from areas where the disease is endemic. Also, the Pentagon is perennially concerned about malaria afflicting U.S. soldiers on foreign deployment, and thus it funds a sizeable military research program. From a historical perspective, one must remember that malaria was not always alien to the terrain of developed countries. In the 18th and 19th centuries, it was a killer even as far north as Quebec. Today, malaria has started to reappear in the former Soviet Union (FSU). In the future, as the global climate warms, it certainly will appear in many, many more places. See World Bank (note 1), pp. 216–19; P. E. Kell, "Malaria in the Rideau Corridor: Causes and Effects of a Tropical Disease in a Non-Tropical Area" (unpublished M.S. Thesis, Université de Montreal, 1990). Malaria in the FSU is reported at http://www.who.ch/press/1996/pr96-36.html and "Tuberculosis Reappears in Europe," *Nature* 1996, 380: 99; climate-related malaria predictions are reported in D. Sharp, "Malarial Range Set to Spread in a Warmer World," *Lancet* 1996, 347(9015): 1612.

**71.** M. MacLean et al., "Making Malaria Research Bite," *Nature Medicine* 1997, 3(1): 14. The authors are citing World Health Organization statistics; see *The World Health Report* 1996 (Geneva: WHO, 1996).

**72.** J. Anderson et al., *Malaria Research: An Audit of International Activity* (London: The Wellcome Trust, 1996), p. 12.

**73.** Basch (see note 2), p. 362.

**74.** The figure of 76% more loss of life is arrived at by a comparison of the World Bank's estimate of DALYs lost to malaria in sub-Saharan Africa as against DALYs lost to all malignant neoplasms in established market economies, aggregating data for both males and females. See World Bank (note 1), pp. 216–19.

**75.** The numbers are even lower (about $67 million) if one excludes non-state funded research. See M. MacLean et al. (note 68), p. 14; and J. Anderson et al. (note 72), p. 17.

**76.** D. Greenberg, "A Pittance to Fight Malaria," *Washington Post*, 4 January 1998.
**77.** See Basch (note 2), pp. 365–69.
**78.** Both figures are reported as 1992 dollars: see J. Anderson et al. (note 72), p. 30.
**79.** NIAID has increased malaria research funding from 1985 to the present (proportionally, it has remained constant at about 1% of NIAID spending). But these gains were more than offset by a swingeing 80% cut in USAID research support over the same term; see J. Anderson et al. (note 72), pp. 17–18.
**80.** USAID received a $50 million special appropriation from Congress in 1997 for infectious disease research and control, about $16 m of which is expected to go toward malaria, augmenting the approximately $12 m that was already budgeted. By comparison, in 1985 USAID spent about $48 m on malaria (1992 dollars); see J. Anderson et al. (note 72), p. 17; and personal communication to the author from USAID.
**81.** Personal communication from scientists of the Military Infectious Diseases Research Program to the author and Ralph Nader.
**82.** D. Wirth and J. Cattani, "Winning the War against Malaria," *MIT Technology Review*, August/September 1997.
**83.** For a survey of malaria scientists showing that parasite genetics and epidemiology are considered among the most promising areas of research, see J. Anderson et al. (note 72), p. 70.
**84.** N.B.: The U.K. has ratified the ICESCR.
**85.** By comparison, the Wellcome Trust, a privately endowed foundation in the U.K., funded a comparable amount ($7.1 million in 1993); see J. Anderson et al. (note 72), p. 20.
**86.** Even this has to be qualified. In 1995, the most recent year for which data are available, the U.K. MRC's malaria grant support dropped precipitously to about $3.7 million, or under 0.9% of the budget. Letter from Ms. Martinez-Townsend, MRC Public Communications, 29 April 1997 (on file with author).
**87.** At this writing Roll Back Malaria (see note 90) is at a germinal stage. Village health care is RBM's main emphasis, although biomedical research will certainly be part of the program. RBM has set itself a goal to reduce malaria deaths 50% by 2010, but lacks the promise of funding to lead a qualitatively fresh attack on the disease. As WHO will not likely be able to dedicate abundant new resources to RBM-sponsored research, the onus continues to lie on developed states to deliver their resources for these activities.
**88.** J. Anderson et al. (see note 72), pp. 16–28. Percentages were calculated by reference to Table 2.1 therein. Figures for individual states were obtained by summing up contributions attributable to each state.
**89.** J. Anderson et al. (see note 72), "Introduction."
**90.** African leaders are, for good reason, alarmed by the malaria problem. At the 33rd Assembly of Heads of State of the Organization of African Unity (OAU) in 1997, they issued the Harare Declaration on Malaria Prevention in the Context of African Economic Recovery and Development, which includes a call for "basic and operational research" to bring the disease to heel. Thereafter, the new Director-General of WHO, Dr. Gro

Harlem Brundtland, announced that a campaign to "Roll Back Malaria" would be the centerpiece of her leadership. What effect these unprecedented gestures will have in galvanizing international efforts against malaria remains to be seen.

**91.** What I describe here is a canonical funding scheme. For a real funding scheme that adheres almost perfectly to this norm, see "MRC Grant Schemes (1996/97 Academic Year)" [pamphlet], Release 1, September 1996 (London: British Medical Research Council).

**92.** The Sources of Biomedical Research Funding database can be accessed remotely through WISDOM, the Wellcome Trust's Internet-based information server, at telnet wisdom.wellcome.ac.uk. The numbers given were obtained on 23 March 1997 by limiting the search to Research Council funding only and searching for the words "tropical," "cancer," and "cardiovascular" in turn.

**93.** One could imagine a similar set of instructions being given to promote the realization of the right to health domestically at equally little trouble or cost.

**94.** No such rules are in evidence in "MRC Grant Schemes" (see note 91).

**95.** To be fair, in contrast to the research councils, national development agencies seem more likely to make such considerations in evaluating research proposals. However, these agencies fund only a minority share of biomedical research, even for diseases of exclusive interest to the developing world: see J. Anderson et al. (note 72), p. 17. It is likely that the share is yet tinier for diseases common to both the developed and developing world, such as AIDS and TB.

**96.** Commission on Health Research for Development (see note 7).

**97.** Telephone interview with Dr. John Evans, 20 March 1997. For an example of the "merit-driven" approach, see "MRC Grant Schemes" (note 91), pp. 1–2 and 7.