Global Health Solidarity

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For much of the 20th century, vulnerability to deprivations of health has often been defined by geographical and economic factors. Those in wealthy, usually 'Northern' and 'Western', parts of the world have benefited from infrastructures, and accidents of geography and climate, which insulate them from many serious threats to health. Conversely, poorer people are typically exposed to more threats to health, and have lesser access to the infrastructures needed to safeguard them against the worst consequences of such exposure. However, in recent years the increasingly globalized nature of the world's economy, society and culture, combined with anthropogenic climate change and the evolution of antibiotic resistance, has begun to shift the boundaries that previously defined the categories of person threatened by many exogenous threats to health. In doing so, these factors expose both new and forgotten similarities between persons, and highlight the need for global cooperative responses to the existential threats posed by climate change and the evolution of antimicrobial resistance. In this article, we argue that these emerging health threats, in demonstrating the similarities that exist between even distant persons, provides a catalyst for global solidarity, which justifies, and provides motivation for, the establishment of solidaristic, cooperative global health infrastructures.

Introduction and Background

Vulnerability to the harms caused by exogenous health threats (EHTs), such as infectious diseases and environmental pollutants, has historically been largely defined by two factors: wealth and geographical location. These features created a global health paradigm in which wealthy people, usually in the global 'West' and 'North', enjoyed protection from such threats as a result of accidents of climate and geography, combined with access to health promoting and preserving infrastructures (Semenza and Menne, 2009: 368). Conversely, as a result of the same contingent factors which benefitted the wealthy, poorer people are exposed to a wider range of EHTs, and have less access to the prophylactic and therapeutic goods needed to safeguard them against the worst consequences of such exposure (Farmer, 1999: 11, 21). However, emerging realities are reshaping these distinctions. Globalization, anthropogenic climate change and the accelerated evolution of antimicrobial resistance (AMR) are redefining who is and is not vulnerable to a wide range of serious threats to health. In doing so, they have instigated a shift in the global health paradigm, from one characterized by differences in exposure to harm, to one in which all persons are increasingly united in their vulnerability to emerging threats.

While these factors mean that public health is increasingly conceptualized as a global public good (Chen *et al.*, 1999; Eckenwiler *et al.*, 2012: 389; Illingworth and Parmet, 2015: 157; Widdows and Marway, 2015: 123), public and policy responses to this paradigm shift in global health have tended to retain (perhaps subconscious) perceptions that there is a sharp delineation between the wealthy and safe 'us', and the poor and vulnerable 'them' (Widdows, 2015).[1] In this article we argue that not only are such assumptions mistaken, but that they impede effective global public health policy, and endanger even the citizens of wealthy countries, who have previously enjoyed the benefits of 'healthful' environments.[2] In making this claim, we also argue that the healthful environments historically enjoyed by the wealthy, in which EHTs[3] are controlled to a reasonable extent, can no longer be treated as regional or national goods. Instead, we argue that they must be acknowledged as aspects of a global health paradigm, demanding global cooperative action to establish and maintain. We also suggest that while existing responses to this paradigm shift in global public health are inadequate, the realities of the shift itself may actually motivate the kinds of actions necessary to respond effectively to these new hazards. Our goal in this article is largely pragmatic, and we certainly do not mean to suggest that the moral status of persons does not provide

doi:10.1093/phe/phw021
Advance Access publication on 6 May 2016

moral reasons to act on their behalf. Rather, our aim is to provide an argument which will complement moral justifications for improvements to global health infrastructure, and which will appeal to those who do not recognize the normative force of classical cosmopolitan arguments for such improvements.

Underlying our argument is an account of solidarity we have developed in the past (Prainsack and Buyx, 2011, 2012a, 2016).[4] We start the article by briefly introducing the account and the importance of solidarity for justice and the delivery of public health and social infrastructure. We close with a discussion of some of the key barriers to establishing solidarity at the global scale, and sketch out a number of implications for future policy.

Defining Solidarity

In our earlier work, solidarity has been defined as an '**enacted commitment** to carry "costs" (financial, social, emotional, or otherwise) to assist others with whom a person or persons recognise similarity in a relevant respect' (Prainsack and Buyx, 2016). It is not enough therefore merely to feel empathy with other persons; to be in solidarity with them is to *act* on their behalf, and accept costs, for example, in the form of additional financial contributions to provide accessible health care, or to accept restrictions on freedoms to consume scarce resources, to benefit them. In addition, such willingness to incur costs to benefit other persons is based on an identification of relevant *similarity* with those other persons 'in a particular context' (Prainsack and Buyx, 2011: 49–50).[5] Similarity can be found in a range of shared personal features, interests or goals, which may be transient or more stable, such as the shared inconvenience as a result of a delayed flight (Prainsack and Buyx, 2011: xiv), or membership of religious, cultural or national groups (Rorty, 1989: 192).

Further, agents who recognize solidarity with others stand in symmetrical relationships as between equals, at least regarding the shared situation, interest or goal. Solidarity is not enacted in unilateral, top down or charitable relationships. This account is in line with recent works on solidarity which state that it is a necessary, motivational precondition for the fulfillment of the demands of justice (Krishnamurthy, 2013: 133; Scholz, 2008: 78). Solidarity also presumes a relational, socially and environmentally embedded understanding of the person.[6] However, such an understanding is often not acknowledged explicitly, particularly in the context of public health.[7]

Solidarity within and between groups is also an often implicit prerequisite for the delivery and maintenance of important social infrastructures, such as the rule of law, and public health programmes, since they rely on cooperative action in the form of participation in taxation programmes and social norms, from all members of the relevant group. In the context of public health, acknowledging solidarity with other persons therefore provides the basis for cooperative endeavours to deliver and maintain important health public goods.

However, solidarity for global public health has historically been elusive, in large part because of dominant social narratives which emphasize relationships with fellow group members over those with distant others.[8] It is argued, for example, that solidaristic identification is easier within limited groups, and amongst persons who are relatively close to one another (Reichlin, 2011: 368), and that 'our sense of solidarity is strongest when those with whom solidarity is expressed are thought of as "one of us," where "us" means something smaller and more local than the human race' (Rorty, 1989: 191).

Where intra-group solidarity is the basis for the delivery of important social goods, inter-group solidarity, even at the regional level, remains elusive, and even more so globally. Many are sceptical of our ability to identify solidaristically with all members of the human species in virtue of our shared, innate humanity (Hurst *et al.*, 2009: 92; Eckenwiler *et al.*, 2012: 383; Gould, 2014: chapter 5).[9] However, rather than deriving solidarity from universal, innate features of humanity, we argue that we should understand solidarity as enacted practices that are based on concrete recognition of similarity in a given *specific* context. Instead of being tied to, and emergent from, pre-existing groups and their internal solidarity norms, such solidarity can therefore be 'project-related' (Rippe, 1998: 355), or based on other contingent features of persons (Rorty, 1989: 191). Consequently, the range of contingent factors that should be acknowledged as being of normative significance expands significantly. That is, the move from 'them' to 'us' (Widdows, 2015) is a shift in perception of what the most relevant features of persons are—from pre-existing and often locally determined factors such as 'tribe, religion, race, customs, and the like' (Rorty, 1989: 192), to commonalities that can range from specific shared goals or experiences, to entrenched shared situations of oppression, or common elements of risks and dangers from EHTs.

As we argue in the following sections, changes to the global health paradigm, or rather, to the global distribution of EHTs, may provide the stimulus needed to

encourage states, and individuals, to recognize relevant similarities between distant persons and groups, and respond to the solidaristic relationships that exist between them appropriately.

Two Shifts in the Global Health Paradigm

Numerous emerging global health threats, of which we discuss two below, provide an exemplary motivator to wealthy countries to expand the range of persons included in their solidary group—that is, the community of persons with whom they feel similarity. Where wealthy countries have traditionally emphasized benefiting their own citizens, and in doing so have imposed significant costs on other persons (Krishnamurthy and Herder, 2013: 273), the threat posed to rich and poor alike by emerging global health threats should motivate wealthy nations to expand the range of persons with whose interests they are concerned.[10] This can be demonstrated with reference to two examples.

Shift One: Antimicrobial Resistance

The evolution of AMR increases risks associated with existing diseases amongst those already at risk (the poor), and exposes new populations (the rich) to threats from which they had previously been protected—with a potential global impact of an additional 10 million deaths attributable to AMR each year by 2050 (The Review on Antimicrobial Resistance Chaired by Jim O'Neill, 2015: 5). For those in wealthy countries, the emergence of drug resistance effectively poses an entirely new category of threat, since they have previously enjoyed access to effective treatment for almost all bacterial infections. With the exception of the frail and the immune-deficient, death from bacterial infectious disease had become the exception since the introduction of antibiotics after the Second World War. This has changed (Viens and Littmann, 2015). The evolution of antimicrobial resistant bacteria means that infectious disease has again become a very real threat—one which can be very difficult or even impossible to treat (Byarugaba, 2004; European Centre for Disease Prevention and Control & European Medicines Agency, 2009: 1-2). There have been many outbreaks of multi-resistant strains in wealthy countries in recent years, with significant fatalities (Reardon, 2014).[11] Thus, for residents of rich Western countries, suffering from an infectious disease without effective treatment available is rapidly changing from the fate of the distant poor to something that could affect one's partner, parent or child.

Shift Two: Climate Change

Like AMR, anthropogenic climate change is increasingly exposing wealthy persons to health hazards which had previously primarily affected people in poor countries. The harms caused by climate change are inflicted either directly, through the increased frequency and severity of extreme weather events such as heat waves (Vandentorren *et al.*, 2004), or indirectly, by contributing to the expansion of habitats suitable for disease vectors (McMichael *et al.*, 1996: 7).[12] Both are major sources of harms to persons in both rich and poor countries (McMichael, 2013: 1340). For example, a heat wave led to approximately 70,000 heat-related deaths in Western and Central Europe in 2003, while in 2010 Russia experienced approximately 55,000 heat-related deaths (Barriopedro *et al.*, 2011: 220). These data are particularly disturbing in light of predictions that the extremes of temperature which led to these deaths could occur as regularly as every 2 years in Southern Europe, North and South America, Africa, and Indonesia by 2050 (Russo *et al.*, 2014: 12500).

In addition, health can also be adversely affected indirectly by global climate change. For example, rising global temperatures affect ozone-related mortality—one study has predicted that climate change will increase ozone-related 'acute mortality' across the New York Metropolitan Area by 4.5 per cent by 2050 (Knowlton *et al.*, 2004: 1557). Increases in global temperature are also predicted to significantly expand the habitable range for a number of vector organisms, meaning that diseases formerly restricted to poorer countries in the Global South are 'migrating' North (Enserink, 2007). This includes Malaria, Dengue fever, West Nile fever and Chikungunya (Semenza and Menne, 2009: 366–367).[13] Similarly, rising ocean temperatures have increased the habitable range for the marine bacteria *Vibrio vulnificus* and *Vibrio parahaemolyticus*, leading to more human infections in a wider range of geographical locations (Burge *et al.*, 2014: 262–263). Fatality rates from *Vibrio* infections are greater than 50 per cent, and infections have been found as far North as the Baltic Sea (Baker-Austin *et al.*, 2013: 73), and Alaska (Martinez-Urtaza *et al.*, 2010: 1781).

The harms inflicted by climate change will not affect all people equally. Already vulnerable people are likely to be more severely harmed because of their pre-existing vulnerabilities, and because the wealthy have more resources available to protect them. However, like the

emergence of AMR, the hazards associated with climate change represent a paradigm shift in the health context previously enjoyed by all persons, even those in wealthy countries. The increased frequency of extreme temperature events expose the citizens of wealthy countries to dangers which they have not previously experienced on such a huge scale, and show how vulnerability to extreme weather scenarios is not something experienced only by those in poor countries. Therefore, like AMR, climate change poses a very real threat to the health and well-being of wealthy people. In doing so, it contributes to the paradigm shift in global health with which we are concerned in this article.

New Realities of Global Health

The evolution of AMR, expansion of vector habitats and the threat posed by climate change serve to 'democratise' the threat posed by many serious threats to health. These threats, and public awareness of them in wealthy countries, are compounded by the effects of globalization. Where previously, for example, it may have been possible for the citizens of wealthy countries to remain unaware of the harms caused by infectious disease in distant countries, contributing to the sense of distance between rich and poor persons, virtually instantaneous electronic communication forces information about outbreaks of infectious disease into the public consciousness in wealthy countries, thereby helping to overcome lack of awareness as a barrier to solidarity between the citizens of rich and poor countries. Similarly, rapid air travel also contributes to the spread of infectious disease to parts of the world which had previously been unaffected (Mangili and Gendreau, 2005), meaning that distant persons are now intimately involved in the lives of people thousands of miles away.

Now more than ever, 'infectious diseases . . . know no borders' (Battin *et al.*, 2009: 34). Indeed, the recent cases of Ebola in wealthy countries during the 2014–2015 Ebola epidemic provide one example of international transmission through human vectors (Centers for Disease Control and Prevention, 2014, BBC News, 2015). Further, as the treatment options available to the wealthy become more limited as a result of AMR, they increasingly share with the global poor common vulnerability to diseases from which they had previously been protected.[14] While the persistently vulnerable poor are likely to continue to be at greater risk than their wealthier counterparts, these factors expose the wealthy to hazards that in the antibiotic era they have previously been able to avoid. In doing so, they highlight a re-emerging and novel common feature between rich and poor—real vulnerability to serious EHTs.[15]

Global Responses to Global Threats

These emerging global threats to health challenge—both individually and collectively—the global health paradigm in which vulnerability to EHTs is unequally distributed, with the wealthy largely living in 'healthful environments', whilst the poor are significantly more exposed to health threats. These changes mean that such healthful environments are no longer sustainable as distinct local or regional public goods.[16] The impacts of the abovementioned health public 'bads' (Illingworth and Parmet, 2015: 152) are global in scope, and cannot be resisted by purely regional responses—isolationism is no longer a viable domestic public health strategy (Widdows, 2015).[17] Instead, wealthy nations must acknowledge the global reach of factors which may have previously appeared to be safely distant, and respond appropriately.

Any successful domestic public health response to the novel threats must acknowledge that the preservation of domestic or regional public health is reliant on the successful promotion of *global* public health. Antibiotic resistance and climate change do not respect borders, nor can they be addressed in a regionally limited fashion (Viens and Littmann, 2015). While restricting responses to global health threats to the regional scale can provide *limited* protection to those in protected zones, doing so allows for the persistence of 'reservoirs of infection', which will continue to pose a significant threat to all persons (Battin *et al.*, 2009: 12, 35).[18] Equally, there is no domestic or regional policy action which can offer an effective long-term response to climate change in isolation from cooperative efforts from all other regional actors (Moellendorf, 2011: 62). Consequently, any domestic public health policy cannot focus exclusively on local interests, since those interests are themselves dependent on global factors. All nations must therefore treat domestic public health policy, at least regarding these health threats, as one aspect of wider global policy. What are needed are cooperative global responses which acknowledge the similarities and solidarities that exist between all persons.

Shared Elements of Vulnerability as a Source of Solidarity

The emergence of these global hazards highlights important points of similarity between citizens of rich

and poor countries where previously difference and distance had been assumed. Correlatively, the global and public nature of the goods and services needed to protect all persons, even the wealthy, from these newly common vulnerabilities, draws attention to the need for cooperative action between all, or at least most, individual and state actors.

However, it must be acknowledged that the dangers faced by members of these two groups, rich and poor, are neither equal nor identical (Mendelsohn *et al.*, 2006; Wheeler and von Braun, 2013). Those earlier mentioned accidents of geography and climate, in conjunction with the presence of effective health promoting infrastructures and institutions in wealthy countries, mean that despite the dangers that climate change and AMR pose to the rich, the poor will remain more vulnerable to the threats posed by the realities of the emerging global health paradigm. While the rich will become more vulnerable than they previously had been as a result of this shift in the global health paradigm, they will still enjoy greater protection from harm than the poor.

However, while it is true that important inequalities in vulnerability between rich and poor will remain, the relevant differences in vulnerability for the purposes of our argument are not between rich and poor in a new global health paradigm, but are instead between the status of the rich *prior* to the advent of this new paradigm, and their status *after* it. While the rich are likely to remain better off than the poor, they will, overall, be substantially worse off than they had been.

The hazards that characterize the emerging global health paradigm provide a vivid demonstration of the vulnerabilities and harms currently endured by the poor, and show how they may also easily endanger the wealthy. While truly common vulnerability will remain elusive under a new global health paradigm, the risks faced by rich and poor alike may be 'common-enough' to motivate solidaristic cooperation in response to global threats.

A coordinated response to the hazards of the new global health threat paradigm can thus arguably be motivated out of fear of the consequences of failure to act effectively.[19] Fear, arising as a result of the new vulnerabilities experienced by the wealthy, may therefore provide motivation to acknowledge previously ignored, and re-emerging, similarities with distant others. It also gives all persons compelling reasons to engage in solidaristic cooperation with those distant others to adequately respond to the emerging global health threats discussed above. Put more positively, greater awareness of our similarities with distant others, arising out of increased knowledge of some common vulnerabilities to serious risk of harm, and the fear associated with such knowledge, may provide the basis of recognition of shared interests in cooperatively promoting health for all persons. In turn, this should motivate the citizens of wealthy states—and in consequence, their shared institutions—to assume costs to cooperate with those with whom they recognize similarity, and truly and earnestly strive to preserve and establish healthful environments for all.

Doing so requires an important shift away from global health initiatives that are based on charity towards solidarity-based initiatives. When populations are asked to help and support others who are threatened by natural disasters or illnesses far away, without any recognition of similarity, such help is usually based on asymmetric charity. A shift from charity to solidarity has important impacts on how equitable the relationships are between those helping and those being helped. Charity is based on a *difference*—donors give beneficiaries something they lack, because donors are richer, more privileged, etc., because their beneficiaries are vulnerable, poor, etc. Here, despite whatever donor and beneficiary may share in common, it is *what sets them apart* that underpins charitable practices. Charitable relationships are therefore, almost by definition, unequal. Solidarity relationships—as far as the solidaristic practice goes—are more equal (in the concrete situation in which they take place). The recognition of similarity entails an acknowledgment that donors are, at least in this relevant respect, in a symmetric and equal relationship with those they help (Prainsack and Buyx, 2016). This, in turn, leads to the delivery of aid that is less likely be imperialistic (Hayter, 1971: 5; Ooms and Hammonds, 2008: 157; Moyo and Manyeruke, 2015), demeaning (King *et al.*, 2014: 3) or patronizing (Pisani, 2008: 192) in the way some charitable aid has been accused of being.[20] Indeed, recognizing similarity with those helped demands that donors take a collaborative and inclusive approach, and that they do not exclude or discriminate against particular groups for irrelevant reasons (Krishnamurthy, 2013). Finally, recognition by donors of solidarity with their beneficiaries—as fellows sharing some risks, threats and common interests—makes it more likely that they will be willing to incur higher costs to establish and preserve commonly needed goods.

There are examples of this thinking penetrating the policy world. A recent report commissioned by the British Government on the problem of AMR (The Review on Antimicrobial Resistance Chaired by Jim O'Neill, 2015), for instance, has an explicitly global focus, and repeatedly emphasizes the need for a global,

cooperative response to the forthcoming crisis. We take this example to support our argument that these new threats are likely to encourage the recognition that global solidaristic cooperation is needed to respond effectively to them at the global scale.

Solidarity and Health for All: How to Get There

The realities of the emerging global health paradigm give compelling reasons for wealthy countries to discard inadequate public health policies based on regional interests and assumptions of distance and difference from their poorer and more distant neighbours. In their place, we have argued that global, solidaristic, approaches to public health should be adopted. However, it has also been noted that such expectations might be misguided or naive, because in past situations of crisis, such as the recent Ebola epidemic, 'practices geared toward protecting national self-interest were again adopted rather than accepting shared responsibilities' (Smith and Upshur, 2015: 8).

We acknowledge the general point of the difficulty in implementing solidaristic practices in the real world. However, our argument here is broader and in fact includes the self-interest of wealthy nations as one of the important prerequisites for future policy change. In fact, much of the force of our argument set out above is derived from an appeal to the self-interest of wealthy countries—to protect their own citizens from harm they must also respond to the needs and interests of distant others. However, we do not mean to suggest that actions which are purely self-interested represent instances of solidarity. Rather, self-interest in this particular context serves as a motivational *starting point* from which solidarity can be developed.[21]

Self-interested motivations to act cooperatively with distant others are based on recognition of similarity in an important aspect with those distant others—to cooperate with others out of self-interest in response to a shared danger is to recognize that threats to others are also threats to oneself.[22] This recognition of similarity is the catalyst which reminds us of our own relationality (Baylis *et al.*, 2008); of the ways in which persons are in solidarity with one another; and sheds light on new, emerging ways in which solidary relationships obtain between persons. In doing so, it forms the basis of solidaristic cooperation. Self-interest therefore represents only a first, yet important, step towards solidaristic cooperation in response to a common danger, in that it serves to highlight those similarities between persons which may previously have been obscured by the assumptions of difference which characterize the individualist, statist international system.

It has been noted that while self-interest provides compelling grounds for responding to the health needs of all persons, at least in response to communicable diseases, self-interest 'works less well for non-communicable diseases (NCDs)' (Widdows, 2015), a point which can also be made about injuries. However, while self-interest may not be able to directly motivate cooperation to ensure the provision of aid for NCDs, injuries and similar conditions, the solidarity it engenders in other areas of public health provision can serve as a foundation upon which to build more general responses to global health needs.

That is, from self-interested motivations for global solidarity in response to particular shared vulnerabilities, it is possible that a more inclusive, and more expansive, global health policy agenda may be developed. Put differently, currently wealthy countries, their citizens and institutions regularly ignore many of the harms suffered by the citizens of poor countries. However, the changes to the global health paradigm discussed above could lead these agents to the initial recognition of particular dangers which they share with the citizens of poor countries (or rather, that some elements of that danger are directly relevant to both rich and poor populations).[23] Through engaging with this particular threat, reporting on it and exploring ways to minimize it for their own benefit, rich populations will be made aware of the harms suffered by formerly unknown distant strangers.

Equally, through engagement with these new threats, wealthy populations will become more aware of those distant strangers with whom some of the risks are shared. It is therefore reasonable to expect that through this engagement, other similarities, such as common elements of threats and shared interests, can emerge which can lead to further grounds for solidarity. At least some of these instances of, and grounds for, solidarity can realistically be expected to be quite broad. For example, wealthy countries may respond to the threat of a particular pandemic disease out of a self-interested desire to protect their own citizens. However, in doing so it is plausible to suggest that through engaging cooperatively with the governments and citizens of poor countries in response to this particular shared threat, it may emerge that there is a broader common interest in having strong public health institutions in vulnerable countries, since these protect everyone most effectively (Boozary *et al.*, 2014: 1859).

Cooperative action in response to a given pandemic disease threat will almost inevitably raise awareness of the health needs of the citizens of the aided countries (Caplan, 2014), and highlight the existence of a relationship between the citizens of rich and poor countries, which is not defined by charitable 'donor/beneficiary' roles. Instead, cooperative responses to shared threats provide examples of how common threats were fought *together* for mutual benefit. Given such shared efforts, and recognition of shared interests, it is likely that motivation to support the establishment of public health institutions can be expected to be at least better than before. We thus move from solidaristic cooperation in one particular respect, to solidarity in others—a move which exemplifies what Kolenda has described as 'incremental solidarity' (1989: 43). To illustrate, initial responses by wealthy nations to the 2015 Ebola outbreak in West Africa began as a response to a particular crisis but developed into recognition of the wider health needs of a vulnerable group, even though the response to those needs was predicated on a concern about the re-emergence of a threat to the health of those in other countries (Boozary *et al.*, 2014: 1859). In practical terms, then, and with regard to global health threats, this requires a significant reframing of global responses—away from 'charitable foreign aid' towards solidaristic practice that focuses on alleviating common threats.

The Costs of Solidarity for Global Health

Existing policy approaches to global public health in the face of these impending public health disasters are (where they even exist) inadequate.[24] In part this is because they are based on a nation- or region-specific interpretation of who counts as worthy of moral concern—and a failure to recognize increasingly common vulnerabilities to emerging threats. The risks associated by the emerging global health hazards mentioned above provide compelling reasons for all persons to engage in solidaristic cooperation through their institutions to adequately protect their own health. However, this has the potential to be extremely costly—in several senses of the term. The need to control carbon emissions may necessitate drastic reductions in air travel, industrial meat production (Aiking, 2014: 483 s) or the use of personal motor vehicles for example (Stanley *et al.*, 2011). Correlatively, ensuring effective global responses to the threat of infectious disease may entail the provision of costly infrastructure to poor countries, which may impose high financial costs on the wealthy (Butler and Morello, 2014; Bartsch *et al.*, 2015: 5–7; Mullan, 2015: e423). Similarly, the economic impact of reducing carbon emissions and the cost of renewable energy infrastructure may be impossible for poor countries to sustain, or may hinder economic development so much that future adequate investment in public health is not possible (Ellis *et al.*, 2009: vii), meaning that yet further costs, such as the provision of financial incentives and assistance to poor countries, may have to be met by wealthy countries (Baer *et al.*, 2008: 13). Efforts to limit the evolution of AMR may entail the imposition of stricter global and local controls on the use of antibiotics, imposing greater burdens, and even harms, on rich-country patients. Limiting access to antibiotics for example may lead to increases in mortality and morbidity from otherwise treatable diseases (Littmann and Viens, 2015: 6, Littmann *et al.*, 2015).

The costs of adequate, cooperative and solidaristic, responses to the emerging global health threats mentioned will be huge. However, the costs of failing to act will almost certainly be far greater. Further, these costs of failure no longer affect distant strangers, with rich donors having only abstract worries over potential risks. Instead, they pose an existential threat to all persons. In addition, the high costs and direct dangers of failure highlight the inadequacies of historical global health policy, and the need to acknowledge the role of global public goods in promoting individual and regional health.

Conclusions

We have argued in this article that adequate responses to emerging global health threats necessitate a paradigm shift in the way in which we approach global public health. We argued that self-interest provides a compelling starting point for solidarity between the citizens of rich and poor countries, because the recognition of similarity in the form of shared vulnerabilities to emerging health threats can catalyse solidaristic cooperation. And only through such solidaristic cooperation can anyone be protected from the dangers posed by the emerging global health threats.

It could be objected that based as it is on the self-interest of wealthy nations, this argument is cynical. However, this does not undermine its force, and in fact may make it more effective at achieving desperately needed outcomes than arguments based on charity, and possibly even those based on justice. As noted, the health policies of wealthy nations have historically emphasized

cynical, short-term and regional interests, at significant cost to both non-citizens, and to their own longer-term interests. Our goal in this article has therefore been to explain the importance of replacing a cynical and increasingly inadequate approach to public health with an instrumentalization of self-interest to move towards an approach that, eventually, is based on solidarity, an approach which is more suited to achieving global health. Self-interest is a motivational tool on the way to this approach; it is not a goal or an end in itself.

While the costs of effective responses to the threats discussed are demanding, they are proportionate to the risks they pose to all persons. Further, and importantly, as we have sketched above, given the immediacy and scale of the problem, people are increasingly likely to be motivated to act, and to accept the costs of an adequate response to these global health threats. For this to actually happen, however, stronger efforts to publicize the looming dangers of global health threats, as well as the need for cooperative action to address them, are necessary.

Finally, we do not mean to suggest that global health solidarity that has been reached this way will resolve all deprivations of health worldwide. Rather, our goal in this article has been to show how in one aspect, solidarity, based on an initially self-interested recognition of similarity, can motivate a response to certain important emerging global threats.

Thinking about global health, and particularly responses to the global health threats mentioned, in terms of solidarity enables, and should motivate, us to view the kinds of sacrifices needed to protect everyone not as burdens imposed on 'us' to benefit 'them'. Rather, if we acknowledge the vulnerabilities we share with other people (who we may previously have excluded from consideration), and accept the existence of the solidary relationships which exist between us, we can instead view those sacrifices as the means to protect 'us all' (Baylis *et al.*, 2008: 205).

Notes

1. Responses by wealthy countries to the recent Ebola epidemic in West Africa were largely muted until wealthy persons were affected (Caplan, 2014). Further, responses tended to emphasize the need to protect citizens of wealthy countries from dangerous threats from overseas rather than on the much greater needs of distant others.
2. Not to mention the fact that they also highlight serious questions of justice, as we briefly discuss.
3. EHTs include things like disease pathogens, environmental pollution, natural disasters and the violence of other persons. Environments which are reasonably free of such threats need not be totally devoid of such hazards (hence 'reasonably free'), but they will include features which minimize as far as is reasonably possible, the risks associated with common EHTs. For example, wealthy countries typically provide infrastructures such as vaccination programmes, sanitation systems and the rule of law, which are intended to protect citizens from the risks posed by EHTs. In this article we focus on those EHTs which more obviously relate to health, infectious disease and environmental threats.
4. Solidarity in a global context has recently received significant attention from a number of theorists (Dean, 1996; Young, 2002; Scholz, 2008; Eckenwiler *et al.*, 2012; Krishnamurty, 2013; Gould, 2014). While there are similarities between the account presented here, there are also significant differences. For reasons of space and scope, in this article, we rely mainly on our account of solidarity and do not contrast this with the work of other authors; however, see (Prainsack and Buyx, 2016: chapters 3 and 4).
5. These active and relational aspects of solidarity have also been defined by other theorists as '"*standing up for*", "*standing up with*", and "*standing up as*"' other persons with whom solidarity is identified (Jennings and Dawson, 2015: 35).
6. See also (Baylis et al., 2008; Eckenwiler, 2012; Eckenwiler et al., 2012).
7. See (Baylis et al., 2008) for an exception to this trend.
8. This is not restricted to works that focus on global health and solidarity (see discussions in Prainsack and Buyx, 2012b, 2016; Dawson and Verweij, 2012; Derpmann, 2013).
9. However, we do not mean to reject the cosmopolitan idea of the shared, innate moral value of all persons. Instead, our goal in this article is to present an alternative argument for increased investment in global health which may appeal to those not convinced by cosmopolitan commitments.
10. Importantly, we do not take actions which are entirely motivated by self-interest to be instances of solidarity. Instead, we take self-interest to be a starting point, from which solidaristic identification can be derived. We explain this point in more detail below.
11. For example, an outbreak of multidrug-resistant *Acinetobacter baumannii* at a hospital in Northern

Germany infected 27 patients, contributing to 11 deaths (Borrud, 2015; Youth Health, 2015). See also (Hosein *et al.*, 2002: 91 s; Sandora and Goldman, 2012; Gallagher, 2014).

12. While the health of citizens of both rich and poor countries will be adversely affected by climate change (and the latter are likely to be affected to a greater extent), we focus in this section on the harms to the wealthy, since our goal is to show how the wealthy can be motivated to engage solidaristically with the poor. Given that citizens of wealthy countries have typically enjoyed less precarious living environments than their counterparts in poor countries (Mendelsohn *et al.*, 2006), the shift can also be seen as more immediately shocking for the wealthy, since it represents a fundamental shift in the kinds of harm they are exposed to, rather than an exacerbation of an existing threat to health.
13. Though it is suggested that, as a result of infrastructure available to the wealthy, most increases in mortality will remain amongst the world's poorer citizens (Semenza and Menne, 2009: 369). See also (Semenza, 2014: 194–195; Confalonieri *et al.*, 2015: 555).
14. The threats posed by these new globalized health hazards are qualitatively different to those posed by pandemic disease. The latter tend to be short term and acute, while the former are long term, chronic, structural and existential. Instead of 'just' a severe outbreak of a dangerous disease within an existing global health paradigm, the new globalized threats represent a paradigm shift in global health threats.
15. Of course, prior to the advent of the antibiotic era, both wealthy and poor people shared common vulnerability to infectious disease. However, then, as now, vulnerability was exacerbated by poverty and deprivation. While common vulnerability to infectious diseases which were controlled during the antibiotic era is not entirely novel when compared to human history as a whole, it does represent a radical departure from the context experienced by wealthy persons for the majority of the 20th century.
16. These 'healthful environments' can reasonably be classified as public goods, since they will require collective, cooperative participation by all members of a given public to deliver and maintain, and once established in a given region are both non-excludable and non-rivalrous (Waldron, 1987: 304). For a more detailed discussion of health public goods, such as herd immunity, and the control of disease vectors see (Hunter and Dawson, 2011: 86; West-Oram, 2013; Widdows and West-Oram, 2013).
17. Between 1990 and 2010, the USA restricted entry for persons living with HIV, to protect American public health—a very recent example of isolationist health policy (Gostin, 2014: 306).
18. Within a few months of the Nigerian state of Kano ending its Polio vaccination programme, the disease 'had spread to 7 neighbouring countries, and eventually on to 19 countries overall' (Battin *et al.*, 2009: 34). Given the speed and accessibility of global travel, and the ease with which certain diseases spread, to allow the resurgence of an infectious disease like Polio (or SARS, MERS, or H5N1 etc.) in one part of the world is to pave the way for its resurgence elsewhere.
19. As noted above, domestic public health efforts such as vaccination programmes are typically constructed to extend their benefits to all persons in a given region at least in part because of fear of the consequences of failing to do so.
20. Even where aid programmes have ostensibly focused on the needs of their beneficiaries in poor countries, many implicitly assume a charitable relationship between donor and recipient. For example, roughly $1 billion of the Bush Administration's *Presidential Emergency Plan for AIDS Relief* (PEPFAR) was reserved for abstinence only programmes (Pisani, 2008: 191–194). Such programmes have a failure rate of around 72 per cent, even amongst wealthy persons in communities which place great social value on abstinence before marriage (Ibid). Not only was this therefore a dramatic misuse of funds, it also displays a worrying attitude on the part of those allocating those funds—that they have the authority over distant others (an important point of difference between donor and beneficiary) to dictate to persons in desperate need how they must live to receive urgent care.
21. In a discussion of solidarity for the domestic context, Baylis *et al.* attempt to move away from self-interest as a foundation for solidarity, and argue that solidarity should be grounded in a shared understanding of the relationality of persons in the domestic context (Baylis *et al.*, 2008: 203). While we are sympathetic to this position, we wish to suggest here that self-interest can serve as a valid and important catalyst for recognition of solidarity, especially at the global level, when relational solidarity, as proposed by Baylis *et al.*, may be harder to perceive.

22. For a discussion of self-interest and global solidarity which complements that provided here, see (Eckenwiler *et al.*, 2012).
23. It must be emphasized that 'shared' here, as elsewhere in the text, does not mean that rich and poor country populations truly share the same or a closely similar *experience*. Vulnerabilities and risks are situated, and have contexts, and histories. What we want to emphasize here is that there are SOME important elements of threat and danger that can be recognized as pertaining to both parties, even if the overall experience remains vastly different. We thank an anonymous reviewer for bringing this to our attention.
24. For a discussion of a range of examples showing the inadequacies of isolationist health policy see (Smith and Upshur, 2015).

Acknowledgements

The authors are very grateful to Professor Barbara Prainsack and Dr Herjeet Marway for their helpful comments on earlier drafts of this article. We are also grateful to the participants of two conferences, *Global Justice: New Directions in Research and Advocacy*, and *The Oxford Global Health and Bioethics International Conference* for comments on preliminary work on this article. Finally, we are extremely grateful to the editors of the journal and to two anonymous reviewers for their helpful comments on the article.

Funding

This work was supported by generous financial support from Emmy Noether Research Group grant BU 2450/ 1-2 of the DeutscheForschungsgemeinschaft.

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