Bioethical Inquiry (2009) 6:207–217
DOI 10.1007/s11673-009-9149-2

Your Liberty or Your Life: Reciprocity in the Use of Restrictive Measures in Contexts of Contagion

A. M. Viens · Cécile M. Bensimon · Ross E. G. Upshur

Received: 28 November 2008 / Accepted: 21 March 2009 / Published online: 15 May 2009

Abstract In this paper, we explore the role of reciprocity in the employment of restrictive measures in contexts of contagion. Reciprocity should be understood as a substantive value that governs the use, level and extent of restrictive measures. We also argue that independent of the role reciprocity plays in the legitimisation the use of restrictive measures, reciprocity can also motivate support and compliance with legitimate restrictive measures. The importance of reciprocity has implications for how restrictive measures should be undertaken when preparing and evaluating public health responses to contagion.

A. M. Viens (✉)
School of Law, Queen Mary, University of London,
67-69 Lincoln's Inn Fields,
London WC2A 3JB, UK
e-mail: a.viens@qmul.ac.uk

A. M. Viens · C. M. Bensimon · R. E. G. Upshur
Joint Centre for Bioethics, University of Toronto,
Toronto, Canada

R. E. G. Upshur
Department of Family and Community Medicine,
University of Toronto,
Toronto, Canada

R. E. G. Upshur
Dalla Lana School of Public Health, University of Toronto,
Toronto, Canada

Keywords Reciprocity · Restrictive measures · Infectious disease · Ethics · Quarantine · Isolation · Liberty

> Our business, daily and hourly, leads us to the depletion of men's pockets and the restriction of their liberty. We cannot expect the thanks of those who feel themselves aggrieved.
>
> *Dr Charles Chapin* (1894:12)

Recent history has indicated that restrictive measures are still an important intervention in modern public health. In the SARS outbreak of 2003, mass quarantine was employed in an effort to control the outbreak in Singapore, Hong Kong and Toronto. The emergence of extensively drug-resistant tuberculosis (XDR-TB) has also raised the issue of the use of isolative measures as a means of reducing spread to communities. The case of Andrew Speaker, an American lawyer who travelled extensively while harbouring a drug-resistant strain of tuberculosis, triggered the first use of American federal quarantine law in 40 years. More significantly, the increased prevalence of XDR-TB globally, and in South Africa particularly, has raised questions about the use of isolation for extended periods of time (perhaps even for life) in the context of a potentially untreatable disease posing a significant threat to the public (Singh et al. 2007).

Nevertheless, even if more nuanced accounts of public health action demonstrate that the use of

restrictive measures is not simply a choice between one's liberty and one's life or health (Ignatieff 2005; Childress and Bernheim 2003; Ackerman 2006; Dyzenhaus 2006; also cf. Bensimon 2008; Viens, in preparation), we are still left with the need to provide—both in terms of theoretical grounding and practical guidance—some account of what justification and legitimacy conditions need to be met in order for the use of restrictive measures to be ethically permissible. In this paper, we explore the role of reciprocity in the employment of restrictive measures in contexts of contagion. The significance of reciprocity as a moral concept of relevance in public health is starting to gain more recognition, but its moral importance has yet to be fully articulated. We argue that reciprocity plays a vital role in establishing when public health action is legitimate when aiming to prevent, contain or eliminate the effects of infectious diseases. As such, reciprocity should be understood as a substantive value that governs the use, level and extent of restrictive measures. We also argue that independent of the role reciprocity plays in the potential to legitimise the use of restrictive measures, reciprocity can also help to motivate support and compliance with legitimate restrictive measures. The recognition of the centrality that reciprocity can and should play in public health action will have important implications for how restrictive measures should be undertaken when preparing and evaluating public health responses to contagion.

Justifying the Use of Restrictive Measures

Protecting the public from communicable diseases is widely viewed as a fundamental obligation of the modern state (or the public health system as one of the organs of the state). As a corollary, it is widely established, at least in liberal democracies, that restrictive measures imposed by public health officials should only be used to protect important individual and societal interests. The threshold for invoking restrictive measures, however, is less categorical. When is the use of any restrictive measure justified to advance public health goals?

Traditionally, the control of communicable disease outbreaks has involved various kinds of restrictive public health measures with different levels of severity and varying implications for limits on liberty. For this reason, justifications for public health action involving restrictive measures have been grounded in different considerations on different occasions; that is, depending on the nature of the contagion and measures in play. Social distancing and voluntary isolation, for example, raise different issues and are presumably less problematic than forcible confinement or detention, which arguably require a greater burden of justification than less liberty-limiting measures. Although we believe that all restrictive measures require justification, our analysis will focus mainly on quarantine and isolation[1] because the exercise of such powers raises the most fundamental issues about the use of restrictive measures: in the case of quarantine, it usually imposes autonomy-limiting measures to *healthy* persons who may or may not pose a danger to others (and most often do not develop disease as noted in SARS); and decisions about quarantine and isolation may be shrouded in uncertainty, especially given the dearth of evidence of their effectiveness.

A closer examination of public health action, however, reveals a lack of explicit robust justification for the use of restrictive measures—because the dominant utilitarian approach of epidemiology and the rights-based approach of law do not pay adequate attention to *moral considerations*—such as reciprocity—relevant to the overall permissibility of such interventions. The morally problematic nature of restrictive measures is not adequately addressed. Even with increasing discourse on the recent emergence and re-emergence of communicable diseases, which has seen a significant shift towards public health requirements, the need for a satisfying account of necessary and sufficient grounds for the ethically permissible use of restrictive measures during public health emergencies remains unmet. Moreover, the too-narrow focus on scientific and legal grounds for restrictive measures has the downstream

[1] The distinction between quarantine and isolation is important to observe: *Quarantine* refers to the compulsory physical separation, including restriction of movement, of populations or groups of healthy people who have been potentially exposed to a contagious disease, or to efforts to segregate these persons within specified geographic areas. That is, these individuals do not manifest any signs and symptoms of disease, but are at risk of developing active disease and contributing to further spread due to exposure to a case. *Isolation* refers to the separation and confinement of individuals with signs, symptoms, or laboratory evidence of infection to prevent them from transmitting disease to others.

effect of shaping the conditions of legitimacy for their use through the very same scientific and legal lens that lacks adequate justificatory power.

In order to demonstrate the moral acceptability of restrictive measures, we must consider the conditions for *moral* legitimacy, which first requires that we can *morally justify* the use of restrictive measures. Before making the case for why moral legitimacy is a necessary part of an account of the morality of using restrictive measures, let us turn to a brief discussion of the problematic nature of scientific and legal justifications for restrictive measures.

In practical terms, public health has few modern referents or precedents on which to base decisions for the use of quarantine or isolation. The example of the recent SARS outbreak is a case in point. Even by the time that SARS was determined to be infectious, inadequate evidence and incomplete knowledge about the disease made decisions about the effectiveness of the use of restrictive measures difficult to reach with any degree of certainty. Yet, amid broader discussions about the justificatory basis of public health action involving restrictive measures in the context of any other communicable disease, many practitioners and scholars alike continue to call for greater evidence-based decision-making, going as far as proposing, as Coker et al. (2007, 612) have done, "to introduce into the language of ethics and rights the notion of evidence-based assessment of risk". It is argued that we only need scientific data to determine the validity of the use of restrictive measures in the control of communicable diseases. Even where there *is* reliable data to support interventions, scientific accounts remain problematic—and perhaps insufficient—because, given the nature of evidence in health care, (varying levels of) uncertainty is inevitable (Bensimon and Upshur 2007).

Similarly, as it stands, there are few legal precedents in communicable disease control that reflect modern developments in constitutional and human rights jurisprudence to adequately guide public health authorities to enforce restrictive measures—the most notable being *Jew Ho v. Williamson* and *Jacobson v. Massachusetts* in the US. In spite of this, the reliance on legal justifications for public health action involving restrictive measures—as an alternative to scientific justifications—is predominant. For example, in a recent article by Boggio et al. (2008), it was argued that international law provides legal justification for enforcing compulsory measures against tuberculosis patients who refuse diagnostic procedures, or who refuse to be monitored and treated once the disease is confirmed. That restrictive public health interventions have successfully prevailed against legal challenges does not, however, make them necessarily justifiable. In other words, a public health action is not justifiable *just because* it is carried out under the rubric of the law. Arguing that the use of restrictive measures is justified on legal grounds by virtue of the existence of laws supporting their use is sufficient because the justifiability existing law is not a given (cf. Enhorn v. Sweden).

Scientific and legal considerations are neither necessary nor sufficient to provide a moral justification of the use of restrictive measures. If they were necessary, no restrictive measures could be used in the absence of evidence or laws, as occurred in the case during SARS. If they were sufficient, public health would not have to consider the impact on individual rights. To impose restrictive measures without the guaranteed prospect of direct benefit, or assumed harm reduction for that matter, we must have a compelling moral justification.

Moral Legitimacy of the Use of Restrictive Measures

When analysing the morality of public health action, we must differentiate between two separate notions: moral justification and moral legitimacy. The moral permissibility of using restrictive measures will depend upon whether such measures are both morally justified *and* morally legitimate.

The moral justification of an act depends on showing why the act under consideration would be morally right in the circumstances. In this case, the question of the moral justification of public health action concerns whether the state should be allowed to use restrictive measures on individuals or groups within its jurisdiction to achieve its public health goals. If the use of restrictive measures is morally justifiable, then it is open to the state to use such interventions in order to advance its public health goals. However, if the use of restrictive measures is morally unjustifiable, such measures are not a morally acceptable option. Within the literature, there are different moral justifications that have been advanced

for using restrictive measures to prevent or mitigate contagion, including self-defense (Wilkinson 2007), and harm to others (Coker 2000; Gostin 2003; Parmet 2008, amongst others).

The moral legitimacy of an act depends on whether a justified act under consideration is performed in a morally acceptable manner. In this case, the question of the moral legitimacy of public health action concerns particular conditions that need to be met by the state using restrictive measures in the pursuit of public health goals. To put the point another way, the moral legitimacy of restrictive measures depends on the way in which the state goes about implementing justified options open to them. The way in which we are using the term *moral legitimacy* here is not to be confused with the notion of morally legitimate state authority, sometimes called *political legitimacy* or *political obligation* (cf. Edmundson 1998; Simmons 1999). Nor are we using legitimacy as Charles Taylor (1994, 58) does:

> to designate the beliefs and attitudes that members have toward the society they make up. The society has legitimacy when members so understand and value it that they are willing to assume the disciplines and burdens which membership entails. Legitimacy declines when this willingness flags or fails (also cf. Taylor 1985).

We are not concerned here with the matter of whether the state has an exclusive right to impose and coercively enforce binding duties on its citizens with its dictates. For the purpose of this paper, we assume that the state has the political legitimacy to undertake actions to protect the public's health. We shall only be concerned with which restrictive public health measures are morally justified and the conditions that need to be satisfied for such measures to be morally legitimate. This notion of the morally legitimacy of public health action is not arbitrary or unfounded. For instance, Gostin (2003) and Trotter (2007) employ a similar notion of legitimacy.

The question of moral justification is conceptually distinct and prior to the question of moral legitimacy. It is distinct because the question of moral justification is concerned with the act of quarantine or isolation *per se* (i.e., whether or not such measures are themselves morally right or wrong), while the question of moral legitimacy is concerned with how such restrictive measures are implemented (that is, whether or not the acts are performed in a way that is morally right or wrong). In contrasting these notions, we can say that the justification question concerns *what* actions the state can permissibly undertake in order to protect public health from the threat of contagion, while the legitimacy question concerns *how* these actions ought to be undertaken. Justification is conceptually prior in virtue of the fact that the legitimacy of public health action depends on satisfying particular conditions of implementing a public health measure that is already morally justified. On this view, public health action can be morally legitimate if and only if it is morally justified. As a consequence, although there can be morally justifiable public health action that is morally illegitimate, there cannot be morally legitimate public health action that is morally unjustifiable.

It is important to understand how these notions relate to each other. Morally illegitimate public health action can, in some circumstances, render the action morally unjustifiable. In the case of restrictive measures, the morally illegitimate implementation of such measures can have a corresponding effect on its moral justification; such that the state could conceivably lose such measures as a viable moral option open to advance its public health goals. The illegitimate implementation of restrictive measures can affect its justification in two ways.

On the one hand, the illegitimacy of public health actions can render such acts unjustifiable for empirical reasons. For instance, presume a particular public health action involving restrictive measures is morally justifiable on the grounds that it prevents harm and that one condition of the legitimacy of such measures is that it is effective. If the use of quarantine were employed in an arbitrary or inconsistent manner, which had the consequence of rendering the measures ineffective in preventing transmission of the contagion, then the illegitimate use of quarantine would prevent such interventions from preventing harm to the population and, thus, would render the moral justification for employing quarantine in the first place invalid.

On the other hand, the illegitimacy of public health action can render such acts unjustifiable for normative reasons. For instance, the use of restrictive measures might be employed in a discriminatory manner or in a way that violates another one of the state's obligations. The use of restrictive measures on Chinese immigrants in San

Francisco in response to the bubonic plague and the influenza pandemic in the late 19th and early 20th centuries would be an example of this (*Wong Wai v. Williamson*; *Jew Ho v. Williamson*; Shah 2001). In such cases, even if restrictive measures are implemented in a way that makes them measurably successful overall in containing the contagion, the fact that such an implementation failed to protect vulnerable populations or resulted in some proportion of the population suffering intolerably can render such measures morally unjustifiable. Returning again to the previous example, in which the moral justification for the use of restrictive measures is harm prevention, the morally illegitimate employment of quarantine—which denies a segment of the population the ability to benefit from the good of public health, for instance, as a result of discrimination—results in such measures failing to prevent harm to those individuals and fails to meet the justificatory burden for employing such measures.

Even though the term "legitimacy" is often used synonymously with "justification" (or even "acceptability" or "permissibility") in public health, we think there is an important philosophical distinction to preserve here and that it also provides further reason to investigate the putative conditions of the legitimacy of public health action. It is clear that any robust account of the use of restrictive measures in public health will have to provide a defence of the legitimacy conditions of these measures, how far their scope extends, and which of these conditions will be necessary, sufficient or (in some combination) jointly necessary and sufficient. Elucidating and analysing the different conditions of the legitimacy of public health action is not only important in itself—we need to ensure such conditions have an adequate theoretical grounding and are able to be articulated with sufficient clarity so as to provide practical guidance to public health officials—but also in terms of how these conditions relate to the moral justification of public health action.

While such an investigation and defense is beyond the remit of this paper, it is reasonable to believe that there are likely a number of conditions for the legitimacy of public health action. These conditions will be scientific, empirical, political/legal or ethical. Some of these conditions will be necessary, while others will be sufficient. For instance, conditions such as effectiveness (Kass 2001;Childress et al. 2001; Childress and Bernheim 2003; Gostin 2003; Verma et al. 2004), necessity (Childress et al. 2001; Childress and Bernheim 2003; Gostin 2003), proportionality (Childress et al. 2001; Childress and Bernheim 2003; Gostin 2003; Singer et al. 2003; Wilkinson 2007), and least infringement (Childress et al. Childress et al., 2001; Childress and Bernheim 2003; Wilkinson 2007) are often cited as putative conditions of moral legitimacy in normative frameworks and policy documents for public health action. Other conditions also cited include fairness (Kass 2001; Childress and Bernheim 2003), impartiality (Childress and Bernheim 2003), and public justification (Childress and Bernheim 2003; Trotter 2007).

Reciprocity as a Legitimacy Condition for the Use of Restrictive Measures

Surprisingly, reciprocity is rarely cited as a condition of the legitimacy for public health action, especially in relation to the use of restrictive measures (Upshur 2002; Singer et al. 2003; Joint Centre for Bioethics 2005; Baylis et al. 2008; Selgelid 2008). Moreover, while reciprocity is also starting to be mentioned in some policy documents, for example in the UK (Nuffield Council on Bioethics 2007; Department of Health, United Kingdom 2007), it is not receiving the attention it warrants.

Reciprocity is generally understood to be based on the notion of mutual regard and fair play. Reciprocity demands an appropriate balancing of the benefits and burdens of the social cooperation necessary to obtain the good of public health. While the relevance of reciprocity is gaining further awareness within the literature, there is much philosophical work to be done on how we should understand the concept and scope of reciprocity in public health ethics and law. Our contribution to this volume is part of a larger project (Viens and Upshur, in preparation), and here we can only provide a partial account of reciprocity in public health ethics. In this paper, we shall not defend a substantive theory of reciprocity, but instead restrict our argument to the general notion of what is required by reciprocity within the context of public health action involving restrictive measures.

Reciprocity requires that one return the good one has received, or responds to harms performed, in a fitting manner. In the context of public health action a number of goods may be relevant, but we will focus

on the good of public health. Reciprocity requires that we compensate those disproportionately burdened by complying with restrictive measures and make restitution to those individuals wronged by being subjected to unfair or intolerable treatment. Reciprocity not only requires that individuals should not be overly burdened by measures to protect public health, but also that individuals are supported in a way that allows them to fulfil their obligations. Reciprocity should be considered a condition of legitimate public health action in communicable disease control because it grants individual and societal interests equal and supporting weight as goods, and provides a common ground for the discharge of moral obligations and acceptance of moral responsibility associated with protecting public health.[2]

In the context of public health action involving restrictive measures, reciprocity will be an important ethical consideration for both how individuals ought to act in the context of a restrictive measures and the state's reasons for employing such measures.

For individuals, reciprocation requires that agents contribute in a way that promotes or returns the goods they have received (in this case, public health), or to prevent inflicting harms on others which affect participating in that good. This reciprocation contribution may take on many forms. One is the obligation not to infect others (cf. Harris and Holm 1993, 1995; Verweij 2005). Individuals have reciprocal obligations to not knowingly put others at risk of being infected by a communicable disease when avoidable. Another is the obligation to show deference to instructions from public health authorities and for individuals to, for example, sequester themselves in their homes and not attend public gatherings. Another is the obligation of individuals, such as physicians, to act as first responders, providing service to protect or restore public health.

For the state, reciprocation requires that it employ public health measures in such a way that those individuals who experience a burden as a result of such measures in order to obtain the good of public health should be supported in a number of ways by the state. Individuals, for instance, who experience a loss of freedom or autonomy as a result of restrictive measures must be adequately supported when experiencing such losses. This may take the form of a system of compensation for missed work, providing access to food and other necessities for those quarantined and isolated, assistance for first responders to balance their personal and professional obligations, amongst a number of other considerations. Reciprocation obligations also require the state to ensure there are several legal protections (both substantive and procedural) in place for those who are subjected to restrictive measures, such as the right to council, the right to a hearing, a right to appeal quarantine and detention decisions, and relief from punishment for non-compliance or violation of restrictive measures on judicial review. The state is additionally obligated to communicate all relevant information regarding the necessity of the restriction, including the expected duration of restriction and the precise time of reassessment of restrictions. Such orders should never be open-ended.

In employing restrictive measures in an effort to protect public health, in order to be morally legitimate the state must ensure that its public health action reflects that individuals are owed a fitting and appropriate return for what they have given up in order to secure the benefit of public health—just as the state is owed a fitting and appropriate return by individuals for their efforts to secure the public's health. Moreover, in understanding reciprocity as a requirement on both individual and state action, different circumstances may warrant that appropriate corrective measures can be undertaken in response to failures to reciprocate. For instance, in cases of individual failures of reciprocation, the state may be

[2] While it is claimed that reciprocity is one of the conditions of legitimacy of public health action, we shall remain neutral on the question of what processes or features confer legitimacy on public health action. Accepting our argument about reciprocity as a condition moral legitimacy leaves it open that moral legitimacy may be conferred on public health measures by democratic processes, legal authority, reasonable endorsement/rejection, etcetera. For instance, Trotter (2007, 30–7) maintains that we need to distinguish between two senses of legitimacy. On the one hand, there is *good reasons legitimacy*, which is "satisfied by well-formed arguments that show how a proposed intervention makes ethical, political and scientific sense" (Trotter 2007, 30). On the other hand, there is *public justification legitimacy*, which "results from a process in which proposed interventions and their rationale are properly discussed, articulated, marketed, explained, or otherwise brought to life before the general public" (ibid). Our focus shall be firmly with the former, though we do not discount the importance of the latter. Indeed, part of the robustness of our account of reciprocity is that it can accommodate both senses of legitimacy.

able to hold people responsible, blameworthy or liable, to restrict or coerce people into reciprocating, or denying compensation for those who fail to reciprocate. In cases of failures of reciprocation on the part of the state, individuals may be able to seek restitution for wrongdoing, or possibly engage in justified civil disobedience.

Of course, in addition to clarifying our obligations and responsibilities, we also need to pay attention to the circumstances that allow us to fulfill our reciprocation obligations. In particular, the reciprocation obligations of individuals and the state will hold in situations where communities are structured such that barriers to discharging those obligations are removed or mitigated. We can only reasonably expect reciprocation obligations to be discharged in circumstances where doing so does not leave individuals or institutions overburdened or unreasonably disadvantaged (cf. Powers and Faden 2006).

Reciprocity as a Basis for Motivating Support and Compliance with Restrictive Measures

Our primary concern has been to argue for the importance of reciprocity as a condition of moral legitimacy for public health action involving restrictive measures. However, there is also an important motivational component that must be kept in mind when seeking support and compliance with the use of restrictive measures. Since the success of public health interventions can often depend on the public's support and compliance with the measures undertaken, the state also needs to be concerned with employing public health measures in a way that generally leads citizens to support policies and accept the decisions required to secure the public's health.

Clearly, the capacity to motivate individuals is not itself a condition of the moral legitimacy of public health action. It is hoped that individuals, in seeing that justified public health actions involving restrictive measures are legitimately implemented, will be motivated to support and comply with such measures; however, this need not be the case. There can be morally legitimate uses of restrictive measures that fail to gain support and compliance, and there can be morally illegitimate uses of restrictive measures that can, and have, gained support and compliance. Nevertheless, it may be the case that particular conditions of the moral legitimacy of restrictive measures may have a more efficacious effect on motivating individuals. While predicting how individuals will be motivated to act in the face of the threat of contagion is difficult, there is evidence to suggest that reciprocity may play an important role in motivating support and compliance with public health measures, especially those involving restrictive measures.

Within the literature, it has been demonstrated that reciprocity has a powerful and complex influence on how individuals behave. That being said, it is worth noting that different literatures—evolutionary biology, psychology, sociology and economics—do not always employ the same notion of reciprocity. However, the aspects of reciprocal behaviour they focus on can still have relevance for the issue of motivating support and compliance with restrictive measures.

Reciprocity is an influential social mechanism for voluntary cooperation between individuals and within society. Benefits provided to individuals—sometimes even unsolicited or unwanted benefits—are often reciprocated, and reciprocity can have both conscious and unconscious effects on how individuals go about discharging their obligations (Gouldner 1960; Pfaff et al. 2008). In the context of complying with restrictive measures, reciprocity would seem to have an important connection to both self-focused motivations (for example harm reduction, fear of negative evaluation) and other-focused motivations (such as empathy and shame) for compliance, or negative emotions for non-compliance (O'Keefe and Figgé 1997, 1999; Millar 2002; Viens 2008).

There are two broad ways in which we could understand reciprocity as a basis for supporting and complying with restrictive measures (Tyler 2006). On an instrumentalist view of motivation, individuals will be motivated to support and comply with public health measures if there is some direct benefit associated with compliance or sanction for non-compliance with the measures. On such a view, reciprocity could play a role in motivating compliance by, for example, compensating those individuals burdened by not being able to go to work or fining/detaining those individuals who fail to observe isolation orders and violate their reciprocal obligation not to infect others. While there are conceptual problems with equating reciprocity as being merely a tit-for-tat notion, it is evident how a tit-for-tat model would fit within an instrumentalist view of motivating compliance with public health measures.

On a normative view of motivation, individuals will be motivated to support and comply with public health measures if they regard such measures as morally appropriate, as opposed to contributing simply to their self-interest. On this view, reciprocity could play a role in motivating compliance because, for instance, the employment of restrictive measures is implemented in a way that is viewed as fair. In the 2003 SARS outbreak in Toronto, studies reported that individuals cited "civic duty" as their primary motivation for supporting and complying with requests by public health officials for work and home quarantine. While citing this obligation as the primary motivation would support a normative view, it is not clear that such a motivation had anything to do with the moral legitimacy of quarantine itself. However, it is quite plausible to think that illegitimate employment of restrictive measures, like work and home quarantines, will either vitiate that civic obligation or have another obligation (say to one's family) override their civic obligation.

We do not believe either view is exclusively correct. Individuals can be motivated by both instrumental and intrinsic considerations—often a combination of both.[3] However, it is relevant that reciprocity can address both the self-regarding and other-regarding basis of motivation.

Moreover, there is reason to believe that there is a mutually supportive connection between reciprocity and trust, which will be extremely important for support and compliance with restrictive measures (see, for instance, Meeker 1984; Berg et al. 1995; Ostrom and Walker 2005). In the context of a public health emergency, such as an influenza pandemic, individuals will almost certainly experience burdens and disadvantages associated with public health efforts seeking to mitigate the threat of contagion, and if those experiences become overly burdensome or unreasonably disadvantageous it will most likely lead to a reduction in trust in the state and its public health officials, and it could have a corresponding negative effect on the support and compliance individuals will have for the restrictive measures. To be sure, more research is needed on the relationship between reciprocity and considerations such as trust, allegiance, and deference, to help better understand the complexities of interpersonal and group behaviour in the context of contagion requiring restrictive measures.

In a recent survey more than 75% of Americans said they would co-operate with restrictive public health measures during an influenza pandemic, such as refraining from using public transit and practicing social distancing, by not going to school, malls, and places of worship (Blendon et al. 2006a; also cf. Blendon et al. 2006b). Quite surprisingly, 94% of respondents said they would sequester themselves at home for seven to ten days if they were infected with influenza. According to a substantial proportion of respondents, while their primary motivation for complying with restrictive measures are not instrumental in nature, there is a pervasive concern that complying with restrictive measures will lead them to experience various problems, including an inability to obtain health services and medications for themselves and care for elderly or disabled family members. Thus, it may be the case that reciprocity will be important not only for providing the initial motivation to support and comply with restrictive measures (before its negative effects are felt), but also for sustaining compliance when the force of the normative considerations that initially lead to an attitude of support begins to lose some of its motivational force.

A study of the SARS outbreak in Toronto revealed that the views on compliance and the means to achieve it varied greatly (Bensimon 2008). There were many contradictions, often by the same participant, clearly illustrating that many were conflicted about how to ensure compliance. In contrast, there was no debate regarding what most thought would greatly facilitate voluntary compliance: that of the

[3] As Koller (2007, 203) has so aptly put the point: "The motivating force of moral norms, however, has its limits too. In general, its strength depends on the extent of reciprocity of human interaction. Therefore, a public morality needs a social world in which individuals feel bound together by ties of social solidarity, a shared interest in mastering their problems of existence cooperatively, based upon an effective social practice. Without such an idea, we shall hardly succeed in establishing a widely acknowledged political and legal order, since the voice of morality will not be strong enough to gain attention against the parties' selfish interest in their struggle for power and benefit. It is, therefore, an important task to create and preserve a climate of social solidarity in order to bring forth the moral virtues without which a well-functional legal order cannot exist."

provision of services and adequate care. Indeed, just as participants vigorously supported quarantine in virtue of the common good, virtually all participants felt that providing support to those in quarantine was an obligation owed to them. It was thought to be a *sine qua non* condition for the implementation of quarantine.

Reciprocity should also be a key consideration in workplace. In the 2006 US survey, predicted co-operation with public health measures involving work restrictions was found to be the lowest. While 57% of respondents maintained that they would comply with requests from public health officials to stay home from work—even if their employers told them to come to work—approximately 35% said they would not comply with such restrictions and would go to work anyway. Unsurprisingly, it was found that the longer public health officials ask individuals to stay away from work the lower the level of compliance because individuals are only able to sustain financial losses for short periods of time. If the state is going to be viewed as fulfilling its reciprocation obligations, there will evidently be a need to provide compensation directly to workers in exchange for staying home, or to provide support (e.g., low-cost loans) for businesses to help pay their workers who are staying home and to keep their doors open or to recover some of their lost revenue.

One final issue to keep in mind is that the role reciprocity may play in increasing support and compliance for restrictive measures need not be complete across the entire population. We should not expect that 100% of the population will voluntarily comply even if the state fulfills its reciprocal obligations; nor is it likely that such a level of compliance is needed to ensure the public health action is successful. What matters is whether reciprocity can contribute to providing individuals with sufficient motivation to comply with restrictive measures at a rate that is adequate to ensure the success of the public health action. For instance, during the SARS outbreak in Toronto in 2003, Toronto Public Health officials reported that only 22 orders for mandatory detainment were necessary amongst the approximately 30,000 people who were voluntary quarantined. While it is impossible to quantify the effect of reciprocity in such situations, it is plausible that the state meeting its reciprocal obligations helped to motivate a majority of people to voluntarily comply with restrictive measures and provided a basis of support for coercion of those who failed to comply voluntarily.

Conclusion

In some ways, recognizing the importance of reciprocity within public health interventions is reminiscent of the 1791 Poverty Committee of the National Assembly in revolutionary France whereby the notion of the "citizen-patients" was employed, in which individuals undertook the reciprocal obligation of supporting and complying with public health measures because it was morally right and in order to keep themselves healthy (Weiner 2001).

Some individuals assume that the use of restrictive measures will only take place when particular conditions of reciprocity are met. For instance, according to Cetron and Landwirth (2005, 326), "[p]rinciples of modern quarantine and social distancing limit their use to situations involving highly dangerous and contagious diseases and when resources are reliably available to implement and maintain the measures". We know from historical uses of restrictive measures, and even from assessments of current capabilities for dealing with public health emergencies involving highly dangerous and contagious diseases, that the employment of such measures cannot be guaranteed to always occur with adequate resources and facilities in place or administered in an appropriate way (see for instance, Markel 1999; Coker 2000; Batlan 2007).

The specific role of reciprocity as a criterion for adjudicating the morality of public health actions, especially in contexts of public health emergencies, still requires greater discussion and analysis. This paper provides a contribution to this need and posits some philosophical distinctions that should guide this process. We have argued that the morality of restrictive measures depends on ethical, political/legal and scientific considerations. Moreover, we have argued that reciprocity can help assure support and compliance with restrictive measures. Charles Chapin may have been correct that restrictions on individual liberty undertaken in order to protect the public's health may leave some citizens aggrieved; however by ensuring reciprocity is a condition of the restriction's legitimacy we have good reason to believe such

restrictions will be more likely viewed as morally permissible and worth complying with.

Acknowledgements This research was supported by the Canadian Institutes of Health Research. Dr Upshur is supported by the Canada Research Chair in Primary Care Research.

References

Ackerman, B. 2006. *Before the next attack: Preserving civil liberties in an age of terrorism*. New Haven: Yale University Press.

Batlan, F.J. 2007. Law in the time of cholera: Disease, state power, and quarantines past and future. *Temple Law Review* 80: 53–122.

Baylis, F., N.P. Kenny, and S. Sherwin. 2008. A relational account of public health ethics. *Public Health Ethics* 1: 196–209. doi:10.1093/phe/phn025.

Bensimon, C.M. 2008. Communicable disease control in the new millennium: A qualitative inquiry on the legitimate use of restrictive measures. (PhD Dissertation, University of Toronto).

Bensimon, C.M., and Ross E.G. Upshur. 2007. Evidence and effectiveness in decision-making for quarantine. *American Journal of Public Health* 97(Supplement 1): 44–8.

Berg, J., J. Dickhaut, and K. McCabe. 1995. Trust, reciprocity, and social history. *Games and Economic Behavior* 10: 122–142. doi:10.1006/game.1995.1027.

Blendon, R.J., J.M. Benson, and K.J.Weldon 2006a. Pandemic influenza and the public: Survey findings. Cambridge, MA: Harvard School of Public Health Project on the Public and Biological Security, available at: http://www.hsph.harvard.edu/panflu/IOM_Avian_flu.ppt. Accessed 17 March 2009.

Blendon, R.J., C.M. DesRoches, M.S. Cetron, J.M. Benson, T. Meinhardt, and W. Pollard. 2006a. Attitudes toward the use of quarantine in a public health emergency in four countries. *Health Affairs* 25: w15–w25. doi:10.1377/hlthaff.25.w15.

Boggio, A., M. Zignol, E. Jaramillo, P. Nunn, G. Pinet, and M. Raviglione. 2008. Limitations on human rights: are they justifiable to reduce the burden of TB in the era of MDR- and XDR-TB? *Health and Human Rights* 10: 1–6.

Cetron, M., and J. Landwirth. 2005. Public health and ethical considerations in planning for quarantine. *The Yale Journal of Biology and Medicine* 78: 329–334.

Chapin, C.V. 1894. Pleasures and hopes of the health officer. In *Papers of Charles V. Chapin, M.D*, ed. F. P. Gorham. New York: The Commonwealth Fund.

Childress, J.F., and R.G. Bernheim. 2003. Beyond the liberal and communitarian impasse: A framework and vision for public health. *Florida Law Review* 55: 1191–1219.

Childress, J.F., R.R. Faden, R.D. Gaare, L.O. Gostin, J. Kahn, R.J. Bonnie, N.E. Kass, A.C. Mastroianni, J.D. Moreno, and P. Nieburg. 2001. Public health ethics: Mapping the terrain. *The Journal of Law, Medicine & Ethics* 30: 170–178. doi:10.1111/j.1748-720X.2002.tb00384.x.

Coker, R. 2000. *From chaos to coercion: Detention and the control of tuberculosis*. New York: St. Martin.

Coker, R., M. Thomas, K. Lock, and R. Martin. 2007. Detention and the evolving threat of tuberculosis: Evidence, ethics, and law. *The Journal of Law, Medicine & Ethics* 35: 609–615.

Department of Health, United Kingdom. 2007. Responding to pandemic influenza: The ethical framework for policy and planning. http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_080751. Accessed 17 March 2009.

Dyzenhaus, D. 2006. *The constitution of law: Legality in a time of emergency*. Cambridge: Cambridge University Press.

Edmundson, W.A. 1998. Legitimate authority without political obligation. *Law and Philosophy* 17: 43–60.

Enhorn v. Sweden (2005), European Court of Human Rights (application no. 56529/00)

Gostin, L.O. 2003. When terrorism threatens health: How far are limitations on human rights justified? *The Journal of Law, Medicine & Ethics* 31: 524–528. doi:10.1111/j.1748-720X.2003.tb00120.x.

Gouldner, A.W. 1960. The norm of reciprocity: A preliminary statement. *American Sociological Review* 25: 161–178. doi:10.2307/2092623.

Harris, J., and S. Holm. 1993. If only AIDS were different!. *The Hastings Center Report* 23: 6–13. doi:10.2307/3562917.

Harris, J., and S. Holm. 1995. Is there a moral obligation not to infect others? *BMJ (Clinical Research Ed.)* 311: 1215–1217.

Ignatieff, M. 2005. *The lesser evil: Political ethics in an age of terror*. Edinburgh: Edinburgh University Press.

Jacobson v. Massachusetts. 1905, 197 US 11

Jew Ho v. Williamson. (1900), 103 F. 10 (C.C.N.D. Cal.)

Kass, N.E. 2001. An ethics framework for public health. *American Journal of Public Health* 91: 1776–1782. doi:10.2105/AJPH.91.11.1776.

Koller, P. 2007. Law, morality and virtue. In *In Working virtue: Virtue ethics and contemporary moral problems*, ed. R.L. Walker, and P.J. Ivanhoe, 191–206. Oxford: Oxford University Press.

Markel, H. 1999. *Quarantine! East European Jewish immigrants and the New York City epidemics of 1892*. Baltimore: Johns Hopkins University Press.

Meeker, B.F. 1984. Cooperative orientation, trust, and reciprocity. *Human Relations* 37: 225–243. doi:10.1177/001872678403700304.

Millar, M. 2002. Effects of a guilt induction and guilt reduction on door-in-the-face. *Communication Research* 29: 666–680. doi:10.1177/009365002237831.

Nuffield Council on Bioethics. 2007. *Public health: Ethical issues*. London: Nuffield Council on Bioethics.

O'Keefe, D.J., and M. Figgé. 1997. A guilt-based explanation of the door-in-the-face influence strategy. *Human Communication Research* 24: 64–81. doi:10.1111/j.1468-2958.1997.tb00587.x.

Ostrom, E., and J. Walker (Eds.). 2005. *Trust and reciprocity: Interdisciplinary lessons for experimental research*. New York: Russell Sage Foundation.

Parmet, W.E. 2008. J. S. Mill and the American law of quarantine. *Public Health Ethics* 1: 210–222. doi:10.1093/phe/phn029.

Pfaff, D., M. Kavaliers, and E. Choleris. 2008. Mechanisms underlying an ability to behave ethically. *American Journal of Bioethics-Neuroscience* 8: 10–19. doi:10.1080/15265160802179994.

Powers, M., and R. Faden. 2006. *Social justice: The moral foundations of public health and health policy.* Oxford: Oxford University Press.

Selgelid, M. 2008. Ethics, tuberculosis and globalization. *Public Health Ethics* 1: 10–20. doi:10.1093/phe/phn001.

Shah, N. 2001. *Contagious divides: Epidemics and race in San Francisco's Chinatown*. Berkeley: University of California Press.

Singer, P.A., S. R. Benatar, M. Bernstein, A.S. Daar, B. M. Dickens, S.K. MacRae, R.E.G. Upshur, L. Wright, and R. Z. Shaul. 2003. Ethics and SARS: Lessons from Toronto. *BMJ (Clinical Research Ed.)* 327: 1342–1344. doi:10.1136/bmj.327.7427.1342.

Singh, J.A., R. Upshur, and N. Padayatchi. 2007. XDR-TB in South Africa: No time for denial or complacency. *PLoS Medicine* 4: e50. doi:10.1371/journal.pmed.0040050.

Simmons, A.J. 1999. Justification and legitimacy. *Ethics* 109: 739–771. doi:10.1086/233944.

Taylor, C. 1985. Legitimation crisis? In *Philosophy and the Human Sciences: Philosophical Papers 2*, 248–88. Cambridge: Cambridge University Press.

Taylor, C. 1994. Alternative futures: Legitimacy, identity, and alienation in late twentieth century Canada. In *Communitarianism: A new public ethics*, ed. Markate Daly. Belmont, CA: Wadsworth.

Trotter, G. 2007. *The ethics of coercion in mass casualty medicine*. Baltimore: Johns Hopkins University Press.

Tyler, T.R. 2006. *Why people obey the law*. Princeton: Princeton University Press.

University of Toronto Joint Centre for Bioethics Pandemic Ethics Working Group. 2005. *Stand on guard for thee: Ethical considerations in preparedness planning for pandemic influenza.* Toronto: Joint Centre for Bioethics, available at: www.jointcentreforbioethics.ca/people/documents/upshur_stand_guard.pdf. Accessed 17 March 2009.

Upshur, R.E. 2002. Principles for the justification of public health intervention. *Canadian Journal of Public Health* 93: 101–103.

Verma, G., R.E.G. Upshur, E. Rea, and S.R. Benatar. 2004. Critical reflections on evidence, ethics and effectiveness in the management of tuberculosis: public health and global perspectives. *BMC Medical Ethics* 5: 2. doi:10.1186/1472-6939-5-2.

Verweij, M. 2005. Obligatory precautions against infection. *Bioethics* 19: 323–335. doi:10.1111/j.1467-8519.2005.00446.x.

Viens, A.M. *Public health emergencies*, in preparation.

Viens, A.M. 2008. Public health, ethical behaviour and reciprocity. *American Journal of Bioethics–Neuroscience* 8: 1–3. doi:10.1080/15265160802180059.

Viens, A.M., and R.E.G. Upshur. *The concept of reciprocity*, in preparation.

Weiner, D.B. 2001. *The citizen-patient in revolutionary and imperial Paris*. Baltimore: Johns Hopkins University Press.

Wilkinson, T.M. 2007. Contagious disease and self-defence. *Res Publica (Liverpool, England)* 13: 339–359. doi:10.1007/s11158-007-9024-0.

Williamson v. Wong Wai. (1900), 103 F. Rep. 10