Risk and asymmetry in development ethics

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Abstract

Risk is implicit in economic development. How should economic development and business transactions in developing countries ethically balance risk and likely benefit? This article explores some of the shortcomings of expected utility theory when it comes to assessing the moral significance and distributive impact of risk. It argues in favour of two moral constraints on risky decisions in developing contexts. The Participation Principle requires that those affected by the risky outcomes of a decision participate in that decision. The Vulnerability Veto requires risk aversion in losses to the most vulnerable. The importance of autonomy supports these principles in asymmetric relations between well-resourced economic institutions and the inhabitants of developing economies.

1. Introduction

How should firms doing business in the developing world make decisions about the risks to which workers, consumers, and communities are exposed? How should agencies tasked with development projects such as dams and other infrastructure take environmental risks and other potential negative outcomes into account in their decisions? More generally, what moral constraints are there on risky decision-making by relatively well-resourced institutions operating in developmental contexts?

By 'risky decision' I mean any decision between alternatives that involve some probability of a negative outcome. An outcome is negative if it is worse than some baseline – that could be the status quo, but it could also be the desired outcome. By this definition, almost any decision is risky and so the question of how to take risk into account is of general importance.

Risk is particularly important in less economically developed contexts. Research in development economics suggests that short-run exogenous shocks may impose persistent effects on those who are vulnerable to poverty (Dercon, 2010; 2004), potentially trapping them in chronic poverty (e.g. Carter & Lybbert, 2012; Giesbert & Schindler, 2012; Barrett & McPeak, 2006). The rural poor also have suboptimal access to ex-ante means of risk management (Dercon, 2002; Dercon & Krishnan, 2003; Morduch, 2004). These sorts of concerns typically arise with respect to the effects of climate and health disasters and other shocks. But even aside from these, we may reasonably be concerned about how risk is distributed when relatively well-resourced or economically sophisticated actors do business with vulnerable members of a developing economy. As an example, consider concerns about the dangers of a multinational corporation hiring workers who may be exposed to the physical health risks of sweatshop manufacturing (Arnold, 2009; Arnold & Bowie, 2003), or the mental health of online content moderators (Block & Riesewitz, 2018; Riedl, Masullo & Whipple, 2020). Consider also debates about whether trade and industrialisation pose risks to the quality of the environment (Copeland & Taylor, 1994; Grossman & Krueger, 1995). These are just instances of a very general normative problem. Our challenge, then, is to develop a general moral framework for understanding how risk should be managed in the context of asymmetric economic relations.

I argue for two minimum moral standards governing risky decision-making in the developmental context. The Participation Principle recommends that those who are affected by the risky outcomes of a decision be empowered to participate in the decision. That is because individuals can have divergent attitudes towards risk, and an individual affected by a risky decision has an autonomy interest in that decision being responsive to her risk attitude. The ideal way of ensuring this responsiveness, and satisfying the autonomy interest, is by allowing the affected individual to participate in the decision.

The Vulnerability Veto applies where risky decisions cannot be made reliably responsive to the risk attitudes of those affected; it requires risk aversion in assessing losses to the most vulnerable. The motivation for the Veto is that the asymmetries involved in the developmental context can make it difficult for decisions to be properly responsive to the risk attitudes of those affected. In that case, there is some moral reason to make a risk-averse decision, though it is unclear what degree of risk aversion is optimal. Since sustained losses to the most vulnerable pose a further threat to their autonomy, at least this is clear: that risk aversion is required when assessing losses to them.

My argument stands at the intersection of philosophy and development economics. There is a burgeoning literature in development economics on how vulnerable individuals and communities are affected by risk and respond to it. This literature largely understands risks as negative exogenous shocks such as droughts or hurricanes (e.g. Clarke & Dercon, 2016, Fuentes-Nieva & Seck, 2010). In contrast, I follow the philosophical literature that understands risk as involved in all decision-making that explicitly or implicitly assigns probabilities to uncertain outcomes (e.g. Buchak, 2013). As such, the argument here is more general than those concerning exogenous shocks and is a precursor to an account of the proper ethical attitude towards disasters and other exogenous shocks. Another

contrast with the development ethics literature is that I focus on transactions involving risk, rather than risk management and risk coping strategies that vulnerable communities or developing states adopt. By attending to this transactional context, I focus on the asymmetries that are typical of interactions between businesses and development agencies on the one hand, and vulnerable individuals and communities on the other.

I present the philosophical background of my arguments in 'Taking risk attitudes seriously' and 'Autonomy and responsiveness'. 'Taking risk attitudes seriously' sets out the case for thinking that moral theory should take risk attitudes into account by showing how the orthodox normative theory of decision-making under risk, expected utility theory, underdetermines the moral importance of risk. It is reasonable for individuals to have attitudes that are not risk-neutral, and the reasonableness of these attitudes means that we cannot assume that it is morally permissible to make decisions in a risk-neutral way.

Instead, the importance of autonomy requires that decisions be responsive to the risk attitudes of those affected, as I argue in 'Autonomy and responsiveness'. By foregrounding autonomy, I work in the tradition of Amartya Sen's Development as Freedom (1999), and more generally liberalism. However, as I explain in 'Autonomy and responsiveness', I adopt a relational conception of autonomy: I acknowledge that individuals exist in relationship to each other and that such relationships may enhance autonomy, even where they diminish certain aspects of individual control. This means that autonomy retains importance even in asymmetric relationships of the type that define developmental interventions.

'Risk and choice displacement' presents the argument for the Participation Principle and the Vulnerability Veto. The argument in the previous sections shows that an individual affected by a risky decision has an autonomy interest in that decision being responsive to her risk attitude. Nevertheless, there are difficulties for a decision maker who wishes to respond to the risk attitudes of the affected: (a) first, there are multiple ways to interpret preferences, and so risk attitude elicitation is unreliable; (b) second, risk attitudes vary across domains; and (c) third, some decisions are transformative, transforming the attitudes of those affected. For these reasons, the affected person should participate in the decision themselves.

However, there are asymmetries characteristic of developmental transactions and interventions that make it difficult to apply the Participation Principle. Where it is impracticable to enable participation, these asymmetries make it even more difficult for a decision maker to respond reliably to the risk attitudes of the affected. In such contexts, there is reason to be relatively risk-averse. One reason is that the decision maker has incentives to be relatively more risk-seeking than the affected, and the affected have incentives to communicate relatively less risk-averse attitudes than they have. Another reason for risk aversion is the evidence we have that those in developing contexts are vulnerable to persistent losses. Taken together, these concerns justify decisions that avoid risks of potentially persistent losses to the vulnerable.

In conclusion, I clarify that these principles differ substantively from the two most popular approaches to public decision-making about risk: the Precautionary Principle and Cost-Benefit Analysis. My account is an alternative to these views, consistent with the criticisms expressed by Sunstein (2005). More work remains to be done in elaborating this perspective, but it has immediate practical application.

2. Taking risk attitudes seriously

We want to know what moral constraints there are on those making decisions that expose members of a developing society to risk. A complete account will depend on our answers to two sets of questions about risk:

- What is the *moral significance of imposing risk on another*? We are familiar with decisions about whether to take on risk ourselves – we do this when deciding whether to undergo an operation, or sign up for disability insurance, or start a business. We also frequently make decisions about whether to expose others to risk, and to what degree. What is the moral significance of imposing the risk of a bad outcome on someone?
- What is the *distributive significance of risk*? We are familiar with theories of justice, such as Rawls's (1999), that tell us how certain goods should be distributed. These typically do not explicitly address the question of how risk should be distributed. Consider the unequal distribution of risks across developed and developing economies. Industrial processes that aid developed economies, such as mining minerals and building components for smartphones, take place in developing economies and impose a greater risk of the harms of industrial accidents on inhabitants of developing economies (De Souza Porto & De Freitas, 1996). Climate change threatens outcomes such as rising water, crop failure, and civil unrest, but the risk of these outcomes is systematically worse for developing than developed countries (Stern, 2006). When are different patterns of risk more just or less just? Furthermore, given that risk is unevenly distributed, what is the distributive significance of imposing additional risk on individuals in a developing economy?

We should dismiss the approach to answering these questions suggested by expected utility theory; the foundation of classical welfare economics that is used to measure the choice-worthiness of alternatives, and treats risk as a weight proportional to probability (Savage, 1954). The normative version of the theory says that a decision maker is rational only insofar as she chooses whichever alternative maximises her expected utility. The expected utility of the alternative is the weighted average of the possible changes the alternative makes to the decision maker's utility, with the weights being the probabilities of those changes. Formally, if an option a has possible utility outcomes $u_{1,\ldots,n}$, and each outcome has probability $p_{1,\ldots,n}$ with $\sum_{i}^{n} p_i = 1$, then the expected utility of a is $\sum_{i}^{n} u_i p_i$, and the decision maker should pick whichever option has the highest such expected utility.

Calculating expected utility in this way is risk-neutral in the sense that a bad outcome with a certain probability rationally has the same value for a person regardless of whether they are risk-averse or risk-seeking: its value is simply the probability-weighted utility of the outcome. For example, the theory tells us that any rational individual should be indifferent between an option that guarantees one unit of utility, and an option that has a 50% chance of providing two units of utility and a 50% chance of providing none. (There are ways in which expected utility theorists can accommodate certain risk attitudes, but these are inelegant and unilluminating. For extended discussion, see Buchak 2013:24-36.)

Expected utility theory suggests (but does not entail) the 'superficial approach': for any choice between risky alternatives, calculate the expected utility of each alternative and apply our traditional principles of morality and justice in making a choice between these alternatives. An immediate problem with applying such an approach to social policy is that it overlooks significant moral questions about how to aggregate and compare risks that fall on different people (Scanlon, 1998; Frick, 2015); I set these aside for another time. The superficial approach is fundamentally consequentialist, and its best-known instance is the widely recommended Cost-Benefit Analysis (CBA)(Adler & Posner, 1999).

Consider how an application of the superficial approach might go; allow that it is sometimes morally permissible for an individual A to impose trivial costs on another B to save the life of C. Indeed, it seems morally permissible that

1. A kicks B's front door down to save C from choking.

But now consider an action that risks a much worse outcome, such as

2. A blows B's door down with explosives to save C, though doing so has a small probability of causing a fire that destroys B's house.

If the probability is small enough, and if it is easier to blow the door down than to kick it down, then the expected utility of A's risky action in 2 may well be the same as that of A's non-risky act in 1. We can even suppose that the expected utilities of the outcomes for B are the same. In this case, the superficial approach says, the moral status of the risky action and the non-risky action are the same since their outcomes have the same expected value.

This result is implausible. Whatever we decide about the permissibility of 2, the fact that B's whole house might have been destroyed seems to raise different moral considerations than the fact that B's door will be destroyed. This point is easiest to see when we consider the possible world in which the house is destroyed, and what A would need to say to defend his decision. It would not be enough for A to say simply that 1 and 2 appeared equivalent to him (even though it may be enough to say that the house was of trivial value compared to C's life). That is because B may care much more about the worst-case outcome than the probable outcome, and the worst-case outcome is much worse in 2 than in 1. We may think that it is irrational for B to hold that view but justifying one's action to another means taking into account what they reasonably care about, rather than what their bloodlessly rational alter ego would care about.

Expected utility theory suggests a similarly superficial approach to the just distribution of risks. Suppose (despite its implausibility) that distributive justice requires strict wealth equality. If we are distributing 100 gold coins amongst a society of 50 individuals, we achieve perfect justice when each has two. Now we want to know how to apply this theory (or a more plausible one) to the distribution of outcomes that involve chances. Suppose we must choose between

3. giving each person in society two gold coins, and
4. giving half of the people two gold coins for sure, and to each of the others a lottery that pays the holder eight gold coins with a 50 per cent chance, and otherwise places the holder in debt to the tune of four gold coins.

Expected utility theory gives the lottery in situation 4 the same value as definitely having two gold coins, and so the superficial approach evaluates both situations 3 and 4 as perfectly just; again implausible. Suppose the lottery is run, and the outcome is that a very few members of society have eight gold coins each, half have two gold coins each, and the rest are in debt. The result is much more unequal than in 3, so intuitively the initial lottery offer that resulted in this inequality should not have the same distributive significance as 3.

The superficial approach goes wrong in many ways, some of which parallel fundamental flaws in normative expected utility theory. The flaw I focus on here is its risk-neutrality. Traditional expected utility theory holds that rationality requires risk-neutrality, but people are not always risk-neutral, and reasonably so. Moral justification should respond to what people reasonably care about.

Furthermore, economists and philosophers have begun to demonstrate that risk-neutrality is not a requirement of rationality, and have developed techniques and arguments that model rational decision-making by risk-seeking and risk-averse agents (Buchak, 2013; Wakker, 2010; Barbera, Hammond & Seidl, 2004:688-837). Recall that expected utility theory treats risk as a simple weighting of the utility of outcomes associated with some alternative. In contrast, it is possible to formulate non-expected utility theories that take a decision maker's risk attitudes into account by altering the risk-weighting of outcomes in response to the 'risk structure' of the alternative, for example, the breadth of possible outcomes; or how bad the worst outcome is, and how probable it is. Buchak (2013) describes these as 'global properties' of lotteries and shows that it is consistent with the axioms of rationality that individuals have risk attitudes sensitive to such properties.

The idea of caring about the risk structure of an alternative helps to show why it is at least reasonable to have an attitude like risk-aversion. The risk-averse person cares about how bad things might get, rather than what things will be like on average, and prefers a narrower spread of outcomes rather than a wider one. Similarly, the risk-seeking person focuses on how good things might get at the expense of accepting a wider range of possible outcomes. Consequently, one problem with the superficial approach to cases like 2 and 4 is that it does not take seriously how bad things are for the person whose

neighbourhood is potentially burned down, or for the person who is potentially left in debt. That is because expected utility flattens out the risk structure of these alternatives.

We see various degrees of non-neutral risk attitudes in everyday life:

- The fact that insurance is widespread attests to the fact the people are risk-averse in some aspects of their lives. The expected utility of an insurance contract is typically lower than the status quo of someone facing the risk of a disaster, but the insurance contract raises the holder's utility floor.
- The fact that gambling is widespread attests to the fact that people are risk-seeking in some aspects of their lives, since the expected utility of a casino bet is lower than the status quo, though of course, it offers a higher high.

Deviations from risk-neutrality are important in developing economies too. Economists have attempted to measure risk attitudes through both experiments and survey instruments (e.g. Binswanger, 1981; Lybbert et al., 2010; Falk et al., 2018), and continue to debate the determinants of these attitudes. Indeed, business ethicists concerned with international transactions have expressed concern that individuals in different countries might have different risk attitudes because of their different cultural frameworks (Donaldson, 1989:109-128). There is insufficient support for the claim that people in developing countries are relatively more risk-averse than in developed countries (Cardenas & Carpenter, 2008:352). Survey evidence suggests that, as in developed countries, prospect theory predicts the risk preferences of individuals in developing countries (Rieger et al., 2015); they are risk-seeking in losses and risk-averse in gains (Kahneman & Tversky, 1979). Yet universally, people engage in practices of risk management. In the absence of formal insurance mechanisms, individuals in developing economies engage in informal means of risk management and coping, such as rotating savings and credit associations, burial societies, and informal risk-sharing networks (Dercon, 2002; Dercon & Krishnan, 2003). These patterns are enough to raise questions about whether risk attitudes place moral constraints on decision-making in developmental contexts.

3. Autonomy and responsiveness

I have been arguing that people have non-neutral risk attitudes, and so we cannot without further justification adopt the superficial approach, which ignores these attitudes. I now turn to the idea that autonomy is an important value in a developmental context, and that the value of autonomy recommends that risky decisions be responsive to the risk attitudes of those affected.

In defending the importance of autonomy, I am not making the implausible descriptive claim that people always act autonomously. Rather, it is a normative claim that people have an interest in autonomy. Indeed, the related idea of freedom has always played an important role in debates about inequality and distributive justice in development economics. When we review these debates, it turns out that freedom is best understood in terms of autonomy.

Measures of inequality and poverty implicitly rely on theories of distributive justice, and in particular, assumptions about the 'currency' of distributive justice (Sen, 1992). Claims about currency are claims about what we should seek to equalise. Economic theory traditionally focuses on preference satisfaction, or 'utility', as the measure of well-being. Typical economic measures of inequality are measures of income or wealth inequality. This measure makes sense insofar as money is one of the main resources by which preferences can be satisfied. Income distribution, therefore, measures the distribution of an important ability – the ability to buy what one wants and needs, whatever that may be. Rawls's famous theory of justice generalises this move to abilities. It says that it is primary resources – including rights, liberties, opportunities, income, and wealth – which should be justly distributed (Rawls, 1999:79).

The shift from measuring a state of well-being, such as preference satisfaction, to measuring the ability to achieve states of well-being captures something important about justice. A focus on resources largely sets aside differences in well-being coming about because of how an individual chooses to use their resources. Contrast the situation of an individual who is poor because she was born in a flood-prone country, and that of an individual who is poor because she unwisely took a gamble by building her house on a shoreline that she knew was likely to experience rising sea-level. A theory that recommends equal distribution of resources does not pity the second individual much, since her poverty is due to what she chooses to do with her resources rather than her initial lack thereof. Freedom appears negatively in such a theory, as a force that removes certain facts from our view because they arose through an individual's free choice.

It would, however, be simplistic to think that the shift to resources gives us a clean distinction between what is due to a choice, and what is due to circumstance. After all, different people have different abilities to transform resources into well-being. Compare giving the same quantity of food to an old monk, who needs little food to thrive, versus a pregnant mother, who needs more. Similarly, more energy will be needed in a very cold climate than a temperate one to achieve the same level of comfort. Call the ability of an individual with a given level of resources to achieve various states of well-being their 'capability'. Distributive justice should compare the different capabilities of different individuals, rather than their different levels of well-being, since differences in capabilities are seldom a product of free choice. That is the lesson of Amartya Sen's Capabilities Approach (Sen, 1992; 1999), whose influence can be seen in such measures as the UN Human Development Reports (Nussbaum, 2011).

The shift to capabilities gives freedom a positive role in distributive justice. Consider the difference between a person who is starving and a person who is fasting. The starving person wants to eat but has no food. The fasting person does not want to eat even if she has food. Simply attending to the fact that each is hungry fails to capture the important difference in their positions. The fasting person is free to eat if she chooses, whereas the starving person is not free in this respect. From a capability perspective, then, the fasting person may be much better off than the starving person even though they have the same state of well-being. So, in considering whether resources have been distributed justly, we

should consider not just what people end up having, but their capabilities. In so doing, we are comparing their freedom to achieve the states of well-being that are important to them.

By measuring the progress of a society in terms of its capabilities, as development scholars and practitioners increasingly do, we implicitly assume that freedom is one of the goals of development (Sen, 1999). We should be clear about the nature of this freedom. It is not freedom as independence from others, the negative state of not being interfered with by others. It is instead the positive state of being able to achieve well-being and to function as one wishes.

The idea of autonomy best captures this positive conception of freedom. Autonomy is the ability to author a life worth living. Being autonomous requires having a wide menu of appealing options, the ability to pursue those options, and the freedom to choose which option to pursue (Raz, 1986:374-376). The emphasis on positive ability is evident in this formulation. The negative conception of freedom is also implicit in the idea of autonomy since being interfered with by others can restrict one's menu of options or one's freedom of choice. Autonomy is, however, not limited to this negative idea, because not all restrictions narrow one's choices. Sometimes restrictions are required to make certain options available. The musician told which notes to play is given the new option of playing a symphony with others, and the driver prohibited from driving above the speed limit is given the option of driving on a safer road.

Autonomy is not an entirely individualistic value. Therefore, its importance should not be neglected by those who reject overly individualistic political theories. Much criticism of liberalism focuses on its alleged individualism. Certainly, it is a mistake to view human beings as self-sufficient individuals, whether liberalism is guilty of that or not. It is also a mistake to think that valuing autonomy forces us into this atomistic picture.

Consider the role that autonomy plays in our thinking about promising and contract; fundamental institutions of everyday morality, and central importance in the liberal tradition. Promising involves a promisor binding herself to a promisee to perform some future course of action. Insofar as one is morally conscientious, binding oneself – placing oneself under an obligation – is a matter of narrowing one's choices. So, on the face of it, promising diminishes the promisor's autonomy. The appeal of promising is that it is also an exercise of the promisor's autonomy. Most obviously, it enables the promisor to 'shape the normative landscape' (Owens, 2012), authoring his moral obligations according to his wishes. That a promisor might gain autonomy by apparently restricting it is only a 'pseudomystery [involving] restrictions undertaken just in order to increase one's options in the long run' (Fried, 2015:17). This phenomenon is no more puzzling (and no less important) than the fact that we can extend our communicative abilities by submitting to the rules of grammar.

That promises and contracts increase autonomy in this way is a direct result of their relational form. The options coming into being for the promisor are available because he has submitted to the authority of the promisee. Promises and contracts also form

the basis of the more complex arrangements and exchanges that relations of trust and reciprocity enable (Hume, 1978:520-521). For example, because of the reciprocal promises in an insurance contract, a shipowner is willing to transport cargo at sea, making it possible for a buyer and seller to establish a trade route between continents, and so for a manufacturer to find a cost-effective supply of the components of in-demand goods. More abstractly, promising allows the promisor to co-author joint arrangements in a way that extends the promisor's reach in the world; and that of third parties. Such joint arrangements – symphonies and soccer teams and start-ups – are crucial for living a meaningful life. They are the kinds of things that appear on an autonomous person's menu.

The lesson we should learn from the structure of promising is that 'autonomy is relational' (Anderson & Christman, 2001; Christman, 2004; Westlund, 2012). I mean two things by this. First, enhancing one's options and therefore, achieving autonomy often involves placing oneself in relations of dependence and vulnerability. That is the sort of relationships that promising creates, but there are other such asymmetric relationships – family and romantic and teacher/student relationships, for example. These relationships are in stark contrast to the supposedly individualistic picture of liberal autonomy. An atomised individual would be unable to achieve much in the world without the social leverage that relations of asymmetric control create.

Second, the things worth choosing that constitute the autonomous person's menu are themselves often relational. Even a scholar like myself, who chooses to spend much time alone, finds the work meaningful only insofar as I can argue and share my thoughts with others. Thus, the goal of the autonomous person is not to lead a fiercely independent life, but to join up with others in relations that are meaningful precisely because they constrain choice.

This relational conception of autonomy is still a conception of autonomy. Even though it acknowledges that asymmetric relations are both the source and the goal of autonomy, it retains the sense that individuals have an important interest in being the authors of their own lives. That is not the same as saying it is always important to have a choice or be in control. We do not always want or need to be in control. Sometimes that is because too much choice can be a burden (Schwartz, 2005), or because of the value of being receptive to accident and happenstance (Slote, 2013), or because it is better to hand over control of our options to someone who will exercise control thoughtfully and beneficially, as in the various relationships we have with professional advisors.

Nonetheless, one can retain one's sense of self-authorship in such circumstances if the fact that one is in a relation of asymmetric control is itself something one can choose, or where it is not if one's partner in such a relation exercises control in a way that is responsive to one's autonomy. That is, even in those circumstances in which one lacks control, one's interest in autonomy continues to exert some moral pressure on how those who do have control exercise it.[1]

1 A similar proposal that Sen makes is that we sometimes value 'freedom without control' (Sen, 1982; 1994:64-69).

I turn now to the way the interest in autonomy, understood relationally, affects our thinking about risk. Paradigmatically, one's interest in autonomy is an interest in being able to make meaningful choices about how to live. We have seen that people have diverse attitudes towards risky alternatives, attitudes that diverge from the choices recommended by expected utility theory. Given that we can make sense of an individual's risk attitude in terms of what is most meaningful to him about the risk structure of an alternative, that individual has an autonomy interest in authoring her life according to her risk attitudes. That, in turn, supports the idea that decisions about risk should be responsive to the risk attitudes of those affected.

In this way, an individual's risk attitudes are much like her preferences or value judgements. Individuals' value judgements are part of how they make sense of the world and define a life that is meaningful for them. To the extent that autonomy outweighs other considerations, we should allow individuals to choose according to their value judgements; and when we choose for them, as the relational view concedes that we sometimes must, we should take their value judgements into account. Of course, the negative effects of an individual's choices on third parties or themselves may limit the importance of autonomy. However, in the first instance, to think that there is something valuable about autonomy is just to think that there is something valuable about giving some weight to a person's value judgements in a decision that affects her. So too, her risk attitudes are a way of making sense of her choices – of how much it matters that she faces the chance of a very bad outcome, or a very good outcome, or some range of outcomes. Therefore, insofar as autonomy is important, there is something valuable about taking her risk attitudes into account in matters that impose risk upon her.

Something similar goes for the distributive importance of an alternative. When we distribute goods amongst individuals, we think that the justice of that distribution has some connection to the value judgements of those individuals. If some individuals prefer music to art, and others prefer art to music, then we think a distribution is more just insofar as it allocates music to the former and art to the latter, or at least distributes equally the resources to choose equally between the two. So too, the fact that some individuals are risk-averse and some risk-seeking means that a distribution is more just insofar as it allocates gambles with a lower floor to the former and higher ceiling to the latter, holding the expected value of the gambles equal.

I have been arguing that a person's autonomy matters even where that person lacks choice and that we should therefore be responsive to such a person's risk attitudes. Consider again scenarios 1 through 4 from 'Taking risk attitudes seriously'. These may appear to necessarily undermine autonomy since they involve one person choosing for another. For example, in choosing between 1 and 2, A chooses for B whether to destroy B's door for sure or destroy B's house by chance. A may be put in this position unavoidably, unable to consult with B about which option to pick, say because A must act urgently, and B is not on the scene. Knowing how much B values his door and how much he values his house would help with forced choices like these since A could act on behalf of B by choosing in a way that is responsive to what B would prefer – doing so would be a way

of recognising the importance of B's autonomy. We constructed these examples in such a way that the utilities and probabilities produce the same expected disutility in each case. On the superficial approach, A faces a choice between two equivalent alternatives.

Seeing things in this way is itself a further threat to B's autonomy. The problem is that B may be risk-averse and may therefore care much more about the possible destruction of his house than is captured by its expected disutility. So, in choosing between 1 and 2 on the basis of expected utility theory, A neglects B's risk preferences and so imposes on B a risky alternative that is not the one she would have chosen. That is an impairment of B's autonomy since it undermines the authorial control she has over her world. Something similar goes for the choice between 3 and 4. Some individuals may well prefer the lottery to the sure thing of two gold coins; some may disprefer it. In treating the alternatives as equivalent, we ignore these preferences and the autonomy of their holders.

In sum, the superficial approach to moral questions about risk that expected utility suggests flattens out the risk structure of risky alternatives and ignores the divergent risk attitudes of individuals affected by risk. That threatens their autonomy. Being able to act on one's risk attitudes is a way of choosing a meaningful life. So, we should think that the moral and distributive significance of a risky alternative rests not just on its expected utility, but also on its risk structure and the risk attitudes of whoever is affected by its outcomes. That falls short of a comprehensive normative theory of risk, but it supports a starting point: that a decision should be properly responsive to the risk attitudes of those upon whom it imposes risk.

4. Risk and choice displacement

We are concerned with developmental contexts in which a relatively well-resourced actor makes decisions that impose risk on the relatively poor: for example, when an agency decides to fund a dam, or when a business owner decides to hire low-skilled workers to work in a new factory.

A distinctive set of asymmetries marks these contexts. The well-resourced actor has great control, relative to the poor actor, over an outcome that is of great importance to the poor actor, relative to the well-resourced actor. For example, the business owner decides whether the factory has one emergency exit or two, and this decision greatly affects the workers' chances of survival if a fire breaks out. Alternatively, the agency decides whether to fund a dam that destroys certain traditional grazing land, and this has a good chance of undermining the way of life of a certain community, even though it also brings them the possibility of great benefits. In these cases, the donor or the business owner has more control over the decision, even though the outcome matters more to the rural farmer or worker. I will call this sort of cross-cutting asymmetry a context of 'choice displacement'. This displacement does not entail moral hazard, since we do not know what the incentive structure is. Choice displacement should pique our moral concern since it involves a decision that has shifted from the grasp of those to whom it matters most.

We should not assume in contexts of choice displacement that a decision maker has reliable access to the risk attitudes of those affected. That is because there will likely be strategic incentives to miscommunicate risk attitudes. For example, suppose a state health agency must decide how much from a limited budget to spend on transferable health resources in unlimited demand (say, a supply of antiviral medication), and it wants to take into account attitudes towards the risk of loss of health. If A is risk-seeking in health, and B is risk-avoidant, A can increase her utility by communicating a risk-avoidant attitude to the state and then selling B some of the health resources. Even if this behaviour arrives at an efficient allocation, there would still be a social loss on the plausible assumption that it would have been more efficient if the agency had allocated the resources based on the actual risk attitudes.

The incentive for recipients to appear relatively more risk-seeking than they are is an instance of the Samaritan's Dilemma (Buchanan, 1977; Gibson, Andersson, Ostrom & Shivakumar, 2005:38-40). The general case is one in which a donor faces a choice between helping and not helping, and a recipient faces a choice between putting some efforts into helping himself and not making any effort. The optimal solution may well be that the donor helps, and the recipient puts effort into helping, but the recipient has no incentive to make an effort. This situation is made worse if the donor is less likely to help where the recipient does make an effort. In our cases, if risk aversion is a way of averting catastrophe, then a recipient facing the possibility of donor aid may have little incentive to act in a risk-averse way. We need not assume that many developmental transactions exhibit some form of Samaritan's Dilemma. The possibility of being in such a situation is enough to undermine the reliability of communicated risk attitudes.

In general, reliable risk attitude communication is undermined precisely because asymmetries of control and importance mark the developmental context. It is the fact that the decision maker exercises great relative control over a matter that is of great relative importance to the beneficiary that gives the beneficiary reason to represent her risk attitudes as more aligned with those of the decision maker than they might be. This alignment is easiest to see in the case of a transaction, such as between a multinational corporation and a developing country worker. The worker in this situation has less bargaining power than the corporation, which may relocate its factory with relative ease. As a result, the worker is likely to misrepresent their risk attitudes so that the transaction is more appealing to the corporation – just as the wage term is likely to reflect the imbalance of bargaining power. The donor-beneficiary case, however, is potentially quite similar. An aid agency must choose amongst multiple projects in allocating its budget. Given this competition for its attention, a community in need of funds may well have relatively little bargaining power in setting the parameters of the project and may misrepresent its risk attitude to make its project seem more appealing.

A different concern arises from the fact that risky decisions may be transformative for those affected. A transformative choice is one which transforms the decision maker's attitudes, such as preferences or beliefs (Paul, 2014). A good example is having children: before having children, it is very difficult to know what having children will be like, and

thus one's preferences for having children cannot be conditioned on accurate beliefs about what it will be like. The act of having children reveals this experience and likely changes one's preferences and beliefs. Many experiences are like this: going to university, moving to the city, having a cochlear implant. Some such experiences may also change one's risk attitudes. The experience of winning a lottery may make one more risk-seeking; either because it affirms a prior risk-seeking act, or because the increase in wealth increases one's sense of safety. It is surely transformative in these ways and more if a person moves from farm work to factory work, or from rural life to city life, since her circumstances and experiences change, as do her social and environmental influences. In contexts of choice displacement, it is unsatisfying, and perhaps paternalistic, if a decision maker simply applies the pre-decisional risk attitudes of those whose attitudes might be transformed in these ways.

4.1 Participation Principle

The ideal solution to these concerns is to let those affected participate in decision-making. Thus, the Participation Principle:

- there is reason for S to participate in a decision to the extent that the decision imposes some risk on S, it is practicable for S to participate in the decision, and S's participation will make the decision properly responsive to her risk attitudes.

It is not for the present discussion to determine what counts as adequate participation. However, it should be noted that some of the concerns mentioned above may infect the participation procedure, where for example the parties are involved in repeated transactions, and the party with relative control over the terms of these transactions observes the choices of the party with less control. For example, if a commercial farmer hires workers seasonally and observes their choices about safety conditions, workers may display relatively risk-seeking attitudes out of a desire to outcompete other workers.

How should a decision maker choose in cases in which participation is impracticable, or unreliable? Here it is important to take note of whether those affected by the decision are vulnerable to poverty and need. Vulnerability and risk are intrinsically related, in ordinary language and quantitative economic measures (Hoddinot & Quisumbing, 2010; Kamanou & Morduch, 2007). Roughly, someone is vulnerable if a negative shock sends them below the threshold of welfare that defines poverty. Even when a negative shock does not eventuate, vulnerability is a threat to a person's autonomy, since it diminishes her capability set – the worthwhile ways of functioning she can choose (Fuentes-Nieva, 2010). It also limits choices; those vulnerable to risk may change their behaviour in ways that limit future prosperity (Morduch, 1995). Vulnerability is context-sensitive since shocks affect people differently. The question for a decision maker is whether people are vulnerable to the particular negative risks that the contemplated alternatives pose.

4.2 Vulnerability Veto

Given the persistent and outsized impact of negative risks on the vulnerable, decisions should be subjected to a Vulnerability Veto:

- an alternative that imposes some risk on the vulnerable should be rejected in favour of an alternative that imposes less risk on the vulnerable, all else being equal; a form of risk aversion.

When faced with two alternatives that have the same expected effect on well-being, the Vulnerability Veto requires choosing the alternative with the higher well-being floor. It is a *ceteris paribus* rule and does not require extreme risk avoidance. When faced with two alternatives with different floors, a decision maker may still choose the alternative with the lower well-being floor if its expected effect is greater, or if there is some other reason in its favour.

This choice leaves open important questions about how risks to the vulnerable are to be weighed against other good-making features of an alternative. Even before settling these issues, it provides important guidance to a decision maker. If the decision maker can keep the expected value of a transaction constant while raising the transaction's floor – perhaps by decreasing the transaction's ceiling – then they are required to do so. That is because there is good reason not to impose risk on the vulnerable unless they reliably choose to take on that risk.

Buchak (2017:631) recommends risk aversion to decision makers who cannot ascertain the risk attitudes of those affected by their decision. I will not engage with this general claim or its defence here, except to note that the Vulnerability Veto is compatible with Buchak's Principle but has narrower application. The Veto follows from Buchak's Principle insofar as the asymmetric context of development undermines the decision maker's ability to ascertain the risk attitudes of those affected, as I have argued above. In this case, Buchak's Principle requires risk aversion, just as the Vulnerability Veto does in losses.

Another general reason for risk aversion can be found in Oberdiek's (2017) claim that imposing risk on another sets back her autonomy, even when the risk does not eventuate. I will not discuss this argument either, except to distinguish it from my own. The autonomy-based justification for the Vulnerability Veto is based on the distinctive harm to autonomy that imposing risks on the vulnerable does. It is not based on a general claim that imposing risk on another is always an intrinsic threat to autonomy.

5. Towards a new framework

I have been arguing for moral constraints on decision-making that arise because of the asymmetric nature of developmental contexts. The Participation Principle recommends that those whom risky decisions affect be allowed to participate in decision-making. The Vulnerability Veto requires risk aversion in losses that potentially lie against the vulnerable. Together, these constraints foreground how risk affects the autonomy and

vulnerability of those affected. They are not a comprehensive moral view of how risk should be managed in developing economies, but they do provide the beginnings of a distinctive view.

This view can be contrasted with the two most popular approaches to risk: CBA, and the Precautionary Principle. Like expected utility theory, CBA is a theory of normative decision-making that aims to optimise the expected outcome of a decision. Unlike expected utility theory, it is concerned not with optimising the preference-satisfaction of an individual, but some measure of collective well-being, say, the financial benefit to the general public. But, like expected utility theory, CBA takes a risk-neutral approach when it uses the expected values of costs and benefits in its analysis (Boardman et al., 2018:269-298). So does the extrapolation of 'value of a statistical life' measures from marketplace rates used to compensate workplace and product risks (Sunstein, 2005:132) if these have different probabilities than the risks relevant to the CBA. But risk-neutrality is not an inherent part of CBA, since the evaluation of risks could in principle take into account the risk attitudes of those affected, and eliciting individuals' willingness to pay to avoid the relevant risks is a way of doing so (Boardman et al., 2018:315-332). However, these CBA methods do not take seriously the need for those affected by risk to participate in decision-making. So, CBA does not avoid the concerns about accurately eliciting risk attitudes or the effects of transformative decisions on risk attitudes, as outlined above. Where possible, we should prefer to comply with the Participation Principle.

- There is much less clarity about what the Precautionary Principle is, other than a commitment to be "better safe than sorry" (Sunstein, 2005:13). A wide variety of epistemic and practical principles have been defended under this heading, and the Precautionary Principle has been criticised because it appears unable to mark a distinctive view that is not: (i) the trivial view that we should give some care to negative risk; (ii) the superfluous view that risks be weighed in just the way CBA recommends; or (iii) the incoherent view that we should avoid all risk.

Perhaps the most popular use of the Precautionary Principle is simply to signal that safety considerations, or the probability of certain sorts of loss, should be given some greater weight than they would by risk-neutral CBA (Geistfeld, 2001). The framework I present here is compatible with this view of precaution. But note, however, that the Vulnerability Veto is a much more specific principle, being constrained to circumstances of asymmetric control in which the vulnerable are exposed to loss.

Moreover, the Veto is secondary to the Participation Principle. Ideally, those affected by a risky decision, even if vulnerable, should be empowered to apply their own deliberation about the risks to the decision-making process. As a general framework, the Precautionary Principle does not give adequate protection to autonomy (see also Sunstein, 2005:204ff), though there may be particular circumstances in which setting aside the risk attitudes of those exposed to risk is justified. Interestingly, precautionary theorists have suggested considering the importance of autonomy by using deliberative forums to set thresholds above which risk is non-negligible and should be avoided (Wareham & Nardini, 2015). But this puts the idea of participation second to a radically risk-averse framework. The

view I defend here does the inverse. Participation is primary and allows participants to adopt any risk attitude. Risk aversion is recommended only where participation is impossible or unreliable.

This order of things is exactly right from the perspective of autonomy. We have an interest in choosing to live in ways we find meaningful. That interest is ideally satisfied when we get to choose for ourselves, and participation in collective decisions is one such way of choosing. There are, however, many cases in which it is impossible or undesirable to participate in decision-making, and in those cases, autonomy is threatened by a decision that unnecessarily increases the negative risks that overshadow the lives of the vulnerable.

References

Adler, M.D. & Posner, E.A. (1999). Rethinking Cost-Benefit Analysis. *Yale Law Journal*, 109:165-247. https://doi.org/10.2139/ssrn.164902

Anderson, J. & Christman, J. (2005). *Autonomy and the Challenges of Liberalism.* Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9780511610325.002

Arnold, D.G. (2009). Working Conditions: Safety and Sweatshops. In: G.G. Brenkert (ed). *Oxford Handbook of Business Ethics.* Oxford: Oxford University Press. 628-653. https://doi.org/10.1093/oxfordhb/9780195307955.003.0022

Arnold, D.G. & Bowie, N.E. (2003). Sweatshops and Respect for Persons. *Business Ethics Quarterly*, 13(2):221-242. https://doi.org/10.5840/beq200313215

Barbera, S., Hammond, P.J. & Seidl, C. (2004). *Handbook of Utility Theory*. Boston: Kluwer Academic Publishers. https://doi.org/10.1007/978-1-4020-7964-1

Barrett, C.B. & McPeak, J.G. (2006). Poverty Traps and Safety Nets. In: A. De Janvry & R. Kanbur (eds). *Poverty, Inequality, and Development*. New York: Springer. 131-154. https://doi.org/10.1007/0-387-29748-0_8

Binswanger, H.P. (1981). Attitudes Toward Risk: Theoretical Implications of an Experiment in Rural India. *Economic Journal*, 91:867-890. https://doi.org/10.2307/2232497

Boardman, A.E., Greenberg, D.H., Vining, A.R. & Weimer, D.L. (2018). *Cost-Benefit Analysis: Concepts and Practice.* 5th Edition. Cambridge: Cambridge University Press. https://doi.org/10.1017/9781108235594

Buchak, L. (2013). *Risk and Rationality*. Oxford: Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199672165.001.0001

Buchak, L. (2017). Taking Risks Behind the Veil of Ignorance. *Ethics*, 127(3):610-644. https://doi.org/10.1086/690070

Buchanan, J.M. (1977). The Samaritan's Dilemma. In: J.M. Buchanan. *Freedom in Constitutional Contract*. College Station, TX: A&M University. 169-180.

Cardenas, J.C. & Carpenter, J. (2008). Behavioral Development Economics: Lessons from Field Labsin the Developing World. *Journal of Development Studies*, 44(3):337-364. https://doi.org/10.1080/00220380701848327

Carter, M.R. & Lybbert, T.J. (2012). Consumption Versus Asset Smoothing: Testing the Implications of Poverty Trap Theory in Burkina Faso. *Journal of Development Economics*, 99(2):255-264. https://doi.org/10.1016/j.jdeveco.2012.02.003

Christman, J. (2009). *The Politics of Persons: Individual Autonomy and Socio-Historical Selves*. Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9780511635571

Clarke, D.J. & Dercon, S. (2016). *Dull Disasters? How Planning Ahead Will Make a Difference*. Oxford: Oxford University Press. https://doi.org/10.1093/acprof:oso/9780198785576.001.0001

Block, H. & Riesewitz, M. (2018). The Cleaners. Documentary film produced by Gebrueder Beetz Filmproduktion.

Copeland, B.R. & Taylor, M.S. (1994). North-South Trade and the Environment. *Quarterly Journal of Economics*, 109(3):755-787. https://doi.org/10.2307/2118421

De Souza Porto, M.F. & De Freitas, C.M. (1996). Major Chemical Accidents in Industrializing Countries: The Socio-Political Amplification of Risk. *Risk Analysis*, 16(1):19-29. https://doi.org/10.1111/j.1539-6924.1996.tb01433.x

Deneulin, S. & McGregor, J.A. (2010). The Capability Approach and the Politics of a Social Conception of Wellbeing. *European Journal of Social Theory*, 13(4):501-519. https://doi.org/10.1177/1368431010382762

Dercon, S. (2002). Income Risk, Coping Strategies, and Safety Nets. *World Bank Research Observer*, 17:141 166. https://doi.org/10.1093/wbro/17.2.141

Dercon, S. (2004). Growth and Shocks: Evidence from Rural Ethiopia. *Journal of Development Economics*, 74(2):309-329. https://doi.org/10.1016/j.jdeveco.2004.01.001

Dercon, S. (2010). Risk, Poverty, and Human Development: What Do We Know, What Do We Need to Know? In: R. Fuentes-Nieva & P. Seck (eds). *Risk, Shocks, and Human Development*. Basingstoke: Palgrave MacMillan. 15-39. https://doi.org/10.1057/9780230274129_2

Dercon, S. & Krishnan, P. (2003). Risk Sharing and Public Transfers. *The Economic Journal*, 113(486):C86-C94. https;//doi.org/10.1111/1468-0297.00116

Donaldson, T. (1989). *The Ethics of International Business*. Oxford: Oxford University Press.

Falk, A., Becker, A., Dohmen, T., Enke, B., Huffman, D. & Sunde, U. (2018). Global Evidence on Economic Preferences. *Quarterly Journal of Economics*, 133(4):1645-1692. https://doi.org/10.1093/qje/qjy013

Frick, J. (2015). Contractualism and Social Risk. *Philosophy & Public Affairs*, 43(3):175-223. https://doi.org/10.1111/papa.12058

Fried, Charles. (2015). *Contract as Promise*. 2nd Edition. Cambridge, MA: Harvard University Press. https://doi.org/10.1093/acprof:oso/9780190240158.003.0002

Fuentes-Nieva, R. (2010). Shocks That Cheat Its Survivors: Disasters and Long-Term Development. In: R. Fuentes-Nieva & P.A. Seck (eds). *Risks, Shocks, and Human Development.* Basingstoke: Palgrave-MacMillan. 40-61. https://doi.org/10.1057/9780230274129_3

Geistfeld, M. (2001). Reconciling Cost-Benefit Analysis with the Principle that Safety Matters More Than Money. *New York University Law Review*, 76:114-189.

Gibson, C.C., Andersson, K., Ostrom, E. & Shivakumar, S. (2005). *The Samaritan's Dilemma: The Political Economy of Development Aid*. Oxford: Oxford University Press.

Giesbert, L. & Schindler, K. (2012). Assets, Shocks, and Poverty Traps in Rural Mozambique. *World Development*, 40:1594-1609. https://doi.org/10.1016/j.worlddev.2012.04.002

Grossman, G.M. & Krueger, A.B. (1995). Economic Growth and the Environment. *Quarterly Journal of Economics*, 110:353-377. https://doi.org/10.2307/2118443

Hoddinott, J. & Quisumbing, A. (2010). Methods for Microeconometric Risk and Vulnerability Assessment. In: R. Fuentes-Nieva & P.A. Seck (eds). *Risks, Shocks, and Human Development.* Basingstoke: Palgrave-MacMillan. 62-100. https://doi.org/10.1057/9780230274129_4

Hume, D. (1978). *A Treatise of Human Nature*. 2nd Edition. Oxford: Oxford University Press. https://doi.org/10.1093/actrade/9780198245872.book.1

Kahneman, D. & Tversky, A. (1979). Prospect Theory: An Analysis of Decision Under Risk. *Econometrica*, 47(2):263-292. https://doi.org/10.2307/1914185

Kamanou, G. & Morduch, J. (2007). Measuring Vulnerability to Poverty. In: S. Dercon (ed). *Insurance Against Poverty*. Oxford: Oxford University Press. 155-175. https://doi.org/10.1093/0199276838.003.0009

Lybbert, T.J., Galarza, F.B., McPeak, J., Barrett, C.B., Boucher, S.R., Carter, M.R., Chantarat, S., Fadlaoui, A. & Mude, A. (2010). Dynamic Field Experiments in Development Economics. *Agricultural and Resource Economics Review*, 39(2):176-192. https://doi.org/10.1017/S1068280500007231

Morduch, J. (1995). Income Smoothing and Consumption Smoothing. *Journal of Economic Perspectives*, 9:103-114. https://doi.org/10.1257/jep.9.3.103

Morduch, J. (2004). Consumption Smoothing Across Space. In: S. Dercon (ed). *Insurance Against Poverty.* Oxford: Oxford University Press. 38-56. https://doi.org/10.1093/0199276838.003.0003

Nussbaum, M. (2011). *Creating Capabilities.* Cambridge, MA: Harvard University Press. https://doi.org/10.4159/harvard.9780674061200

Oberdiek, J. (2017). *Imposing Risk*. Oxford: Oxford University Press. https://doi.org/10.1093/oso/9780199594054.003.0002

Owens, D. (2012). *Shaping the Normative Landscape*. Oxford: Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199691500.001.0001

Paul, L.A. (2014). *Transformative Experience*. Oxford: Oxford University Press. https://doi.org/10.1093/acprof:oso/9780198717959.001.0001

Rawls, J. (1999). *A Theory of Justice.* Revised Edition. Cambridge, MA: Harvard University Press.

Raz, J. (1986). *The Morality of Freedom*. Oxford: Clarendon Press.

Riedl, M.J., Masullo, G.M. & Whipple, K.N. (2020). The Downsides of Digital Labor: Exploring the Toll Incivility Takes on Online Content Moderators. *Computers in Human Behavior*, 107:106262. https://doi.org/10.1016/j.chb.2020.106262

Rieger, M.O., Wang, M. & Hens, T. (2015). Risk Preferences around the World. *Management Science*, 61(3): 637-648. https://doi.org/10.1287/mnsc.2013.1869

Savage, L. (1954). *The Foundations of Statistics*. New York: John & Sons.

Scanlon, T.M. (1998). *What We Owe to Each Other*. Cambridge, MA: Harvard University Press.

Schwartz, B. (2005). *The Paradox of Choice*. New York: Harper Perennial. https://doi.org/10.1037/e597322010-001

Sen, A. (1982). Liberty as Control. *Midwest Studies in Philosophy*, 7:207-221. https://doi.org/10.1111/j.1475-4975.1982.tb00092.x

Sen, A. (1992). *Inequality Reexamined*. New York: Russell Sage Foundation.

Sen, A. (1999). *Development as Freedom*. New York: Alfred A. Knopf.

Sen, A. (2009). *The Idea of Justice*. Cambridge, MA: Harvard University Press. https://doi.org/10.2307/j.ctvjnrv7n

Slote, M. (2013). *From Enlightenment to Receptivity*. Oxford: Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199970704.001.0001

Stern, N. (2006). *The Economics of Climate Change*. Cambridge: Cambridge University Press.

Stewart, F. & Deneulin, S. (2002). Amartya Sen's Contribution to Development Thinking. *Studies in Comparative International Development*, 37:61-70. https://doi.org/10.1007/BF02686262

Sunstein, C.R. (2005). *Laws of Fear*. Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9780511790850

Wakker, P. (2010). *Prospect Theory*. Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9780511779329

Wareham, C. & Nardini, C. (2015). Policy on Synthetic Biology: Deliberation, Probability, and the Precautionary Principle. *Bioethics*, 29:118-125. https://doi.org/10.1111/bioe.12068

Westlund, A. (2009). Rethinking Relational Autonomy. *Hypatia*, 24(4):26-49. https://doi.org/10.1111/j.1527-2001.2009.01056.x