Scarcity

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It is often said that economics is the science of scarcity. But since a lot of economics is just applied ethics, it is perhaps more apt to say the real science of scarcity is ethics. Scarcity is arguably one of the fundamental problems that morality has evolved to address. Most discussions in ethics assume some kind of scarcity in the background.

Broadly speaking, there are two kinds of scarcity. First, there is scarcity of external resources. You probably have things that I want, and I may have some things that you want. Perhaps we can share them, or trade them, or make promises of future goods in exchange for them, or try to take them forcefully. There are also things that neither of us have, but we both want. Perhaps we can cooperate in order to get them, or compete for them, or ask a third party, like the state, to distribute them between us. Sometimes we believe we have a *moral claim* to some resource, maybe because we need it, or would benefit the most from it, or simply because we want it. All of these ways of dealing with scarcity are infused with norms.

Second, there is scarcity of internal resources. There are many things that we want or need or ought to do, but we can't do all of them. We are finite beings with limited physical strength, willpower, rationality, attention, empathy, or time. We have to prioritize, and that requires controlling our desires and managing our powers. The way we deal with our constraints determines whether we can flourish and how we relate to others: it impacts how and to what extent we cooperate, contribute to the common good, and what we can expect in return. All of these, too, are infused with norms.

External Resources: Justice

The modern philosophical discussion of scarcity begins with David Hume (*see* HUME, DAVID). In Book III of *A Treatise of Human Nature*, Hume distinguishes between abundance and moderate and extreme scarcity. He argues that justice arises only in conditions of moderate scarcity. If there was no scarcity of external and internal resources, justice would be unnecessary: "if men were supplied with every thing in the same abundance, or if every one had the same affection and tender regard for every one as for himself; justice and injustice would be equally unknown among mankind" (1739: bk. 3, pt. 2, sec. 2). In contrast, justice would be infeasible in conditions of extreme scarcity: "where the society is ready to perish from extreme necessity, no greater evil can be dreaded from violence and injustice; and every man may now provide for himself by all the means, which prudence can dictate, or humanity permit" (1777: sec. 3, pt. 1). Justice is necessary and possible only in conditions of moderate scarcity.

International Encyclopedia of Ethics. Edited by Hugh LaFollette.
© 2018 John Wiley & Sons Ltd. Published 2018 by John Wiley & Sons Ltd.
DOI: 10.1002/9781444367072.wbiee853

John Rawls (*see* RAWLS, JOHN) adopts Hume's idea and considers moderate scarcity part of the background conditions (or "circumstances") of justice. In the original position, the parties know that these conditions apply to their society. Among them: "Natural and other resources are not so abundant that schemes of cooperation become superfluous, nor are conditions so harsh that fruitful ventures must inevitably break down. While mutually advantageous arrangements are feasible, the benefits they yield fall short of the demands men put forward" (1999: 110).

This may suggest that scarcity depends only on the availability of resources. But it is more precise to say, as economists do, that scarcity is relative to preferences. We wouldn't consider scarce a resource that nobody wants. What makes a resource scarce, more than its physical availability, is how many people want it and how strongly they want it relative to other goods. Our assessment may also depend on whether the resource is needed for survival, desirable for a comfortable life, or merely a matter of luxury. Thus, we might say that moderate scarcity obtains if and only if resources can be distributed in a way that people's most important needs are met but not in a way that *all* of their wants are satisfied (see Goodin 2001). On this view of the matter, it is compatible with moderate scarcity that some people have great abundance while others face extreme scarcity, or that some resources are abundant but others are extremely rare.

Hence issues of justice can arise even when some goods are extremely scarce. Consider natural disasters, battlefields, or other mass casualty events, when human and physical resources are, at least temporarily, acutely insufficient. In such "triage" cases, victims may be divided into three groups: those who will die no matter what we do, those who will survive anyway, and those for whom immediate medical intervention can make the difference between life and death. Resources are then concentrated only on the third group. Many would agree that triage is not just a dictum of prudence, but a demand of justice. Hume might have been too pessimistic about the possibility of justice in extreme scarcity.

Rescue cases provide another example. Imagine you are in a lifeboat and you have to decide whether you save one drowning person by steering in one direction or you save five drowning people by steering in another. You cannot reach all of these people in time, so you have to decide whether you rescue one person or five people. In this case, your lifesaving effort is an extremely scarce resource. Philosophers disagree on what you ought to do, and their disagreement is about the demands of justice. Some claim you are permitted or even required to save the greater number. Others hold you are required to give everyone an equal chance – by, for instance, flipping a coin to decide whether to save the one or the five. Some others argue that you should give all the victims a proportional chance: everyone should have a one-sixth chance of being saved, which amounts to a five-sixths chance for the group of five of being saved. And so on. All these are views on what justice demands.

Arguably, even abundance can raise issues of justice. Hume gives air and water as examples of resources that are not scarce. But in the intervening centuries, we have learned that, even if a resource is abundant, its quality can still deteriorate if we overuse it or treat it as an unlimited sink. For instance, there are limits to how much of

our greenhouse gas emissions the atmosphere can absorb without adverse effects on the climate. Managing the scarcity due to the deterioration of common resources has become one of the most pressing practical and philosophical issues of our time (*see* CLIMATE CHANGE; TRAGEDY OF THE COMMONS).

Moderate scarcity, then, is a prerequisite of social life, and the point of justice is to manage the scarcity in ways that are beneficial to all. It seems therefore that one basic criterion for evaluating theories of justice is how well they do this – whether they match resources as well as possible to people's needs and wants.

Some theories do well on this criterion. Utilitarianism, for instance, recommends actions and policies that maximize aggregate well-being. Assume, for the present discussion, that well-being consists in getting what you want (or what you would prefer in ideal conditions for forming preferences, or in the satisfaction of your preferences for objectively valuable goods, or what would make you happy). On utilitarianism, resources will be distributed in a way that maximizes the satisfaction of these wants. All available resources are allocated as long as there are people who can benefit from them. Scarcity is reduced to the greatest extent possible in the sense that there will be no resources left over that could benefit someone. Utilitarianism, therefore, manages scarcity well (*see* UTILITARIANISM; WELL-BEING).

The same is true of some rival views on the demands of justice. Prioritarians, for instance, hold that the right action or policy is that which maximizes weighted well-being, where the weights are greater the worse off people are (*see* PRIORITARIANISM). This view, too, distributes all resources as long as there are people who can benefit from them, and hence manages scarcity well.

The relation between justice and scarcity, however, is less straightforward on some other views.

Consider egalitarianism (*see* EGALITARIANISM). If it is in itself bad that some people are worse off than others, then one way we can make the situation better is by making the better off people worse off. We can take away some of their resources. Critics of egalitarianism point out that this way we have just made some people worse off without making anyone better off; and there can be nothing good about this way of achieving equality. This is known as the *leveling down objection* (Parfit 1995).

Egalitarians have responded in a number of ways to this objection. Some have argued, for instance, that egalitarianism should be considered just one component of a pluralist view of social ethics; leveling down is prohibited by some other component within such a broader theory. Whether that's an adequate response is a question I leave open. My point is that part of what makes the leveling down objection seem so powerful is that leveling down entails a pointless waste of resources and increase in scarcity. Egalitarianism, considered in itself, does not manage scarcity well. Even if it distributes resources in a way that meets people's most important needs, it may leave some wants unsatisfied when they could be satisfied.

A particularly influential strain within egalitarianism holds that it is unjust if some people are worse off than others through no fault or choice of their own. This is the central idea behind *luck egalitarianism*. At least some luck egalitarians also

hold that it is *not* unjust if some people are worse off than others through their own fault or choice. "Fault or choice" is interpreted in terms of responsibility: an outcome that is your own fault or choice is that for which it is appropriate to hold you responsible. Although there are many differences between different luck egalitarian views (some, for instance, substitute prioritarianism for egalitarianism), all of them are concerned with responsibility. So let us say that all of these are responsibility-sensitive views of distributive justice.

Responsibility-sensitive views, it seems, have difficulties with managing scarcity. To see this, consider a person who gets injured in an accident while riding his motorcycle without a helmet. He has no insurance and he had a few drinks beforehand. His bad outcome is due to his own choice; it's his own fault; he is responsible for it. Suppose also that there are resources to help this person – a fully equipped ambulance car happens to be on the scene. It's not needed anywhere else, thus treating the motorcycle rider has no opportunity costs. Yet, for luck egalitarians, there is no demand of justice to treat the person in need. Perhaps justice even demands that he should not be treated, given his responsibility. Luck egalitarians often reply to cases like this that, even though there is no demand of justice to treat this person, there is some other moral reason to do so – perhaps based on a duty of compassion, beneficence, or humanity. Yet, to many people, it remains striking that there is no duty of justice involved.

This objection to responsibility-sensitive views is known as the *harshness objection*, because it is thought that such views are unjustifiably harsh toward victims who are responsible for their bad luck (see Anderson 1999). But an additionally troubling aspect of the objection is that no demand of justice arises even when there is no scarcity. Again, what make the harshness objection seem so powerful are the pointless underutilization of resources and increase in scarcity. If the point of justice is to manage scarcity, then these views might end up doing it rather poorly.

Finally, consider views that hold that justice demands that people get what they deserve (*see* DESERT). On these views, it is possible that people deserve more than what is available. It could be that people are so deserving that not everyone can get their due, even though resources are abundant. In this case, managing scarcity well becomes impossible: the demands of justice cannot be satisfied. It is also possible that people deserve less than what is available. What are the demands of justice in this case? Should desert-based views say that once everyone has what they deserve, there are no further demands of justice, even though there are resources left over to satisfy more of people's wants? Would it be unjust if people got more than what they deserved?

Perhaps defenders of desert-based views can respond by redefining the concept of scarcity. Rather than accepting that scarcity is relative to wants and needs, they can hold that it is relative to desert. Thus, there is no scarcity if everyone can get exactly what they deserve. There is scarcity only if it's impossible to arrange things in a way that everyone gets what they deserve. If the shortfall is small, the scarcity is moderate; if the shortfall is large, the scarcity is extreme. But this is hardly a solution to the problem that such views fail to meet needs and wants even when resources are available.

Another complication for managing scarcity is that there are different *reasons* for which people should have resources. The most straightforward are reasons of benefit: when resources are scarce, they should be distributed in a way that creates the most benefit. If the resource is divisible, it should be divided in a way that maximizes the benefits: those who can benefit more should have a larger share; those who can benefit less should have smaller shares. If the good is indivisible, it should go to the person who can benefit the most from it. This ensures that scarce resources are distributed in the most effective way. For instance, if there is a shortage of organs for transplantation, they should be given to those whose prognosis is the best.

But sometimes the reason people should have a resource is that they have a *moral claim* to it. For instance, in health care ethics it is commonly argued that all people have a moral claim to having their health care needs met, regardless of their capacity to benefit from medical intervention. When people have a moral claim to a resource, some philosophers have argued, they should have a share of it according to the strength of their claims, rather than their capacity to benefit. If their claims are equally strong, and the resource is divisible, they should have equal shares; and if the resource is not divisible, they should still have a chance of getting it, through, for instance, a lottery (Broome 1999; see also Bognar and Hirose 2014).

What creates a moral claim remains a controversial question. William Godwin, for instance, seems to have thought that if you can benefit from a good, you have a moral claim to it, and the greater your capacity to benefit, the stronger your claim (1793: bk. 2, ch. 2). This view collapses the distinction between reasons of benefit and moral claims, and few philosophers accept it today. Other proposals are that moral claims arise from needs (cf. Wiggins 1998) or fairness (Broome 1999). Finally, it can be thought that rights constitute a particularly strong form of moral claim: if you have a right to a good, it cannot be weighed or balanced with other considerations, including considerations of need or benefit (cf. Nozick 1974).

Internal Resources: Self-Control

Hume begins his discussion of scarcity in the *Treatise* with the observation that humans seem to have been dealt an extremely poor hand by nature. A lion has to hunt to feed itself but it is well equipped to catch its prey. Humans, in contrast, lack the ability and strength to survive on their own. They need the cooperation of their fellows to meet their needs and satisfy their wants.

Cooperation requires special sets of cognitive and executive skills. It requires the ability to recognize others as potential participants in mutually advantageous arrangements, rather than mere competitors; the ability to plan ahead and to coordinate one's behavior with others; and the self-control to carry out one's part in collective actions even in the face of the more immediate rewards of defection. It also requires punishing those who do defect even if that is individually costly and hazardous. And finally, it requires the willingness to share the fruits of collective endeavors.

But all the abilities that cooperation needs come in short supply. In the language of modern evolutionary ethics, our social life is beset by "altruism failures" (Kitcher 2013; *see* EVOLUTION, ETHICS AND). We are limited in our abilities to read the intentions of others, to persevere and withstand temptation, and to distribute the fruits of cooperation in a fair-minded way. We find it easiest to exercise these abilities when it comes to close family, kin, or friends. Our dealings with them are governed by sympathy, guilt, forgiveness, and other moral emotions. But in our dealings with mere acquaintances or strangers, we do not exhibit the "same affection and tender regard" (as Hume put it). Our sympathy and compassion are limited and we tend to rely on norms of fairness instead.

Still, it's remarkable how often we are able to overcome failures of altruism. Often, people are able to avoid Prisoner's Dilemmas or develop "nice" strategies in repeated ones, rewarding cooperative behavior and punishing defection. People are able to devise institutions to avoid Tragedies of the Commons. In Public Goods games – in which players secretly choose how much they put in a public pot, the experimenter multiplies the amount and divides it evenly among the players – people do make contributions even though self-interest would dictate to contribute nothing. In Ultimatum games – in which one player proposes a division of a "prize" which the other player can then either accept or reject – people often reject proposals which they judge to be unfairly low, even though self-interest would dictate to accept any amount.

These ways of managing the scarcity of external resources require people to be willing to forgo more immediate benefits for greater benefits at a later time, to risk some immediate benefits for the chance of greater rewards, and to make sacrifices to punish non-cooperative behavior. In short, they all require that people constrain the pursuit of their immediate self-interest by exercising self-control (or, to employ an older term, use their willpower). But self-control in itself is a finite resource. In fact, it is often described in terms of another scarce internal resource, that of physical strength. One philosopher claims "that there is a faculty of willpower – something like a muscle – and that, when desires and resolutions clash, we can succeed in sticking to our resolutions by employing this faculty. Moreover, employing the faculty is hard work: it requires effort on the part of the agent" (Holton 2003: 58; *see* WEAKNESS OF WILL).

Empirical research seems to support the idea that self-control is an exhaustible resource. In one experiment, one group of participants were told to eat only radishes from a table where chocolate chip cookies were also displayed; another group was given cookies. Afterwards, everyone was given some unsolvable puzzles, and the experimenters measured the time before participants from the two groups gave up. Those who had eaten cookies spent substantially more time and made more attempts to solve the puzzles than those who had eaten radishes. Apparently, participants who had to resist the temptation of chocolate chip cookies had depleted their "willpower" to a greater extent by the time they got to the puzzles. This phenomenon has become known as *ego depletion* (Baumeister et al. 1998).

As interesting as this phenomenon is, it is not uncontroversial. At least, a large-scale replication effort could not reproduce it. On the other hand, the new studies

used a different (computer-based) methodology. So, at this time, it's hard to assess the empirical evidence for the exhaustible resource model of self-control (Hagger et al. 2016).

Be that as it may, if willpower, or self-control more generally, is a limited resource, then it stands to reason that different people have different "amounts" of it, and that managing the scarcity of this resource has an important role in life. In a famous series of studies, children aged between 4 and 6 were given a marshmallow that they could eat presently, but they were also promised another marshmallow if they would wait until the adult experimenter returned to the room. The original experiments, carried out in the 1960s, turned into a lifespan study, with the researchers following up the children throughout their lives. Children who were better able to delay gratification coped better in adolescence and had higher educational achievements as adults, as well as a higher sense of self-worth, and better ability to cope with stress (Mischel et al. 2011). However, these experiments also revealed that there are effective strategies of delaying gratification, and these can be learned. If self-control is a limited resource, it can be enhanced.

Scarcity of internal and external resources are not unrelated. Recent empirical research also shows that people who face severe scarcity of external resources reason and behave differently from those who face only moderate scarcity. In a laboratory study, richer and poorer participants were asked to think about common financial demands while undertaking standard tasks for measuring cognitive function. Poor participants performed worse than rich participants. In a field study, the cognitive capacities of sugarcane farmers in India were studied. Because of the seasonal nature of their work, farmers are poor before the harvest and richer afterwards. In tests of cognitive function, the same farmers performed substantially worse before the harvest than after. As the researchers summarized their findings, these laboratory and field studies "illustrate how challenging financial conditions, which are endemic to poverty, can result in diminished cognitive capacity" (Mani et al. 2013: 979). One possible reason is that people, when faced with scarcity, allocate their attention differently: they focus on matters that scarcity makes salient and neglect others – typically those which include greater but less immediate benefits. Focusing on how to pay for groceries next week, people neglect regular home maintenance. Thus, "resource scarcity creates its own mindset, changing how people look at problems and make decisions" (Shah et al. 2012: 682).

The finding that scarcity of external resources can lead to the depletion of internal resources is not surprising. After all, if you are poor, you have to think more about your expenses, worry more about meeting your immediate needs, and make more difficult trade-offs. These concerns are surely taxing on people's cognitive systems. This may explain why people in poverty often make choices that reinforce their poverty, like using less preventive health care, failing to adhere to drug regimens, or missing appointments, and why they are less productive workers, less attentive parents, and worse at managing their finances.

But the philosophical implications of these findings are less clear. Should we conclude that people facing severe scarcity become irrational? Or that they are not

irrational, given their circumstances, but their self-control is exhausted by the pressures of scarcity, as the empirical researchers claim? Or merely that scarcity changes people's ends or undermines their beliefs? Or maybe even that scarcity changes the structure of people's deliberation, and different norms of rationality apply under such circumstances? Should we reformulate the theory of instrumental rationality in light of the empirical results on scarcity? (For discussion, see Morton 2016; *see* RATIONALITY.)

It is not an exaggeration to say that scarcity is part of what makes us human. Scarcity of external resources is a precondition of social life and it determines what we owe to one another. Scarcity of internal resources sets the parameters of how we can shape and give meaning to our lives. As a latter-day disciple of Hume put it: "Scarcity in the forms of human fulfilment seems a fixed feature of human life. Each of us can realize in herself only one of the many possible lives that together make up human flourishing" (Gauthier 1986: 334).

***See also*:** CLIMATE CHANGE; DESERT; EGALITARIANISM; EVOLUTION, ETHICS AND; HUME, DAVID; PRIORITARIANISM; RATIONALITY; RAWLS, JOHN; TRAGEDY OF THE COMMONS; UTILITARIANISM; WEAKNESS OF WILL; WELL-BEING

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