

15. On the forms of harm stemming from the instrumentalization of large-scale ecosystems

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Abstract

One could argue that the use, extraction, and development of natural resources for human purposes, i.e. resource exploitation, constitutes a form of instrumentalization of the ecosystems from which these resources are derived. Moreover, that such instrumentalization may be carried out in a way that has adverse social and environmental impacts. Given that a number of ecosystems are indispensable for the satisfaction of human interests and needs, their instrumentalization may nevertheless be justified. In this context, if the amount and rate of instrumentalization of ecosystems leads to their depletion, people whose well-being depends on the ecosystems' existence may be profoundly harmed. Those instrumentalization practices and actions that lead to states of depletion are generally considered as harmful, but only to those whose interests and needs are frustrated as a result of such practices and actions. In this paper, I argue that the way in which ecosystems are instrumentalized, and not just the quantity and rate, may also cause a philosophically relevant form of harm, and not necessarily to humans: A given ecosystem may be meaningfully harmed not only when it is depleted, but also when its functioning is altered in such a way that it cannot retain core capacities it had before it was instrumentalized.

Keywords: resource exploitation, natural resources, commons, extractivism, integrity

Harm and instrumentalization

Broadly, resource exploitation refers to the use, extraction, and development of 'non-human nature' as a means to achieve human ends (Blackburn, 2016). Resource exploitation can thus be understood as the instrumentalization of non-human nature by human beings in pursuit of certain purposes, such as the fulfilment of their vital needs. Following this definition, a broad concept of non-human nature (however defined) makes it possible to indicate the origin of all goods and services, i.e. natural resources, available for human purposes (whether justified or not). Yet, if one considers concrete cases of resource exploitation, such a concept seems to be insufficient to indicate what is actually being instrumentalized and whether practices or actions of this kind can be of philosophical interest. For instance, when water is extracted from an underwater reservoir, it is 'the system' that constitutes the reservoir from which the water flows that is being instrumented, not 'non-human nature' as a whole.

In this sense, so-called natural resources can be said to derive from ecosystems that, given their particular characteristics, can provide humans with the means to achieve certain ends (Walker and Salt, 2012). If this premise can be reasonably sustained, one could argue the following: Resource exploitation refers to the instrumentalization of ecosystems, from which natural resources flow. I shall go a step further and argue that resource exploitation can be meaningfully understood as the harmful instrumentalization of the ecosystems from which these resources flow. I shall elaborate on this. First of all, it should be clarified that although the use, extraction and development of resources may be reasonably defined as the instrumentalization of the ecosystems from which these resources flow, resource exploitation does not manifest itself through any type of instrumentalization practices and actions, but only through those

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that can be qualified as harmful. This is because the way of instrumentalizing an ecosystem may produce different consequences in each case, both for those who instrumentalize and for the instrumentalized.

For example, if a rainforest providing with vital resources is instrumentalized in such a way that its trees cannot grow or resprout over time, the rainforest and those who depend on it will be affected differently than if the rainforest had not been instrumentalized in that way or instrumentalized at all. Although in different ways, both the instrumentalizer and the instrumentalized are affected. Either because access to the rainforest is difficult to restrict or because its capacity to provide resources to humans is limited, instrumentalization actions and practices to it need not have a negative impact on it and on those who carry them out. Drawing on common-pool resources literature (e.g. Gibson *et al.*, 2000), one could think of ways of instrumentalizing the rainforest, for example, by managing it in such a way that the trees that compose it can grow, resprout, and generally sustain themselves over time while the communities of users of this rainforest benefit from it. From this perspective, I examine the extent to which resource exploitation amounts only to those harmful instrumentalization practices and actions to the ecosystems.

Given the relational nature of ecosystems, however, this is not the only form of harm that may result from resource exploitation. Consequently, the purpose of this paper is to provide a brief theoretical picture of two forms of harm that could arise from resource exploitation, one in relation to the ecosystems themselves (observable harm) and the other in relation to the would-be instrumentalizers of the ecosystems (perceivable harm). According to the literature on social harm (e.g. Yar, 2012; Pemberton, 2016), a state of harm is usually validated or discarded according to the empirical knowledge of those who have the capacity to perceive it. Hence, one might be tempted to say that only those who have this capacity can directly be harmed. Against this idea, I shall analyse some of the conditions required for being in a harmed state and, therefore, who and what can properly be considered as the harmed subjects of resource exploitation.

I begin by providing some influential definitions of harm that can be put to the test in the context of resource exploitation and, in the following sections, provide an analysis of the perceivable and observable harm that can be said result from said practices and actions. Legal philosopher Feinberg (1987) gives a well-known account of harm by differentiating between a non-normative and a normative notion, the former defined as a setback of individuals' interests and the latter as wrongs. His own notion, as he considers it relevant to justify state coercion over the liberty of the individual, combines both notions (Feinberg, 1987, Ch. 3). He further distinguishes 'welfare interests', which are those necessary and minimum for the attainment of a well-being, from 'ulterior interests', which are rather interests related to one's own personal projects and goals. Well-being understood as the 'advancement' of ulterior interests provided that welfare interests are met to a minimum degree, e.g. when there is no incapacitating suffering (Feinberg, 1987, 51).

According to him, although nonhuman animals can be said to possess welfare interests, only humans can be said to pursue their fulfilment in order to advance their ulterior interests (Ibid., 59). In other words, to the extent that welfare interests set the basis for the advancement of ulterior interests, only humans can be indefensibly (unjustifiably and inexcusably) thwarted and also wronged in their ulterior interests. Nevertheless, animals can also be indefensibly thwarted in their interest to achieve those conditions that are indispensable for their welfare. Non-living entities or 'mere things' can shatter or split and others at best be broken. Entities that have some function in a wider context may cease to work, and even complex assemblages composed of living organisms may be impaired when one of these components is crucially altered so that they can no longer behave as they normally would.

In general, though, all things in which no person has an interest or in which no person has a derivative interest at most, cannot properly be said to be harmed. In a less legal vein, others have opted for a more

open and deliberative definition of harm, i.e. they present this concept as a work in progress (Hillyard and Tombs, 2004). Similarly, other scholars argue that harm can be regarded as a 'reflection of relations, processes, flows, practices, discourse, actions and inactions that constitute the fabric of our societies which serve to compromise the fulfilment of human needs' (Pemberton, 2016, 24). Although the latter notion may be more encompassing in relation to unmet needs, the harmed subject as a site of philosophical inquiry is still relegated to the interpersonal and social sphere. Hence, if the definition of harm is to be taken as a work in progress, there is room to inquire whether entities such as ecosystems can be directly harmed when instrumentalized.

Exploitation and perceivable harm

Perceivable harm can be considered as the form of harm experienced by the injured party. However, not everything that is experienced with displeasure, resentment, or discomfort can qualify as perceivable harm, as it would then have to include innumerable states, rendering the philosophical relevance of harm a mere matter of definition. For example, if an earthquake causes you a physical injury, it will probably hurt, but you will not perceive this injury as a harm done to you. Similarly, if you do not like a specific type of food and eat it, you will probably feel aversion towards it, though it you will probably not describe this experience as harmful. Accordingly, there have to be something that differentiate perceptible harm from other injuries. I shall call these the 'severity' and the 'controllability' conditions of harm.

Regarding the severity of harm, Feinberg (1987) points out that what is significant is not only the particularities of each sensory experience, both physical and mental involving injuries, offenses, or other forms of discomfort, but the general contrast that all of them have with the states of harm. To be harmed (and wronged), you have to be indefensibly 'stripped of' something you value. Though not everything that is valuable is such that its absence is harmful; just as not everything that is undesirable is such that its presence is harmful. An undesirable thing is harmful only when its presence is sufficient to impede an interest (Feinberg, 1987, 48); be it a welfare interest or an ulterior one. Thus, harmful practices and actions come to be defined as are those that infringe on something that can be considered a legitimate interest, whether one chooses to see it in the form of individual needs, goals, or even social conditions.

Regarding the controllability of harm, a distinction can be made between harms caused directly between individuals or harms framed in a broader context. As for interpersonal harm, one option may be to describe it in terms of intentionality, emphasizing individual agency in harming. For broader, or social forms of harm, one option may be to describe it in terms of preventability, emphasizing not necessarily individual agency in causing harm, but intervention to prevent it (e.g. Yar, 2012). Moreover, the consequences of harmful practices and actions, whether towards individuals or collectives, have to be (to some extent) foreseeable (Presser, 2013; Plant, 1998). Returning to the previous example of the rainforest providing human beings with vital resources, one could say that those actions and practices of instrumentalization of this forest that intentionally or foreseeably endanger the provision of these resources are likely to cause perceptible harm to human beings.

Whether one chooses to explain harm in terms of reversal of welfare interests or unmet needs, it seems rather unproblematic to say that those practices and actions which endanger a sentient being's livelihood, can be considered as harmful. Moreover, if it can be argued that a minimum threshold of well-being for human beings, and at least for other sentient beings, can be understood as the absence of incapacitating suffering (Feinberg, 1987, 51), then the non-fulfilment of certain needs could be conceived as instances of harm. Seen in another way, reaching a minimum threshold of well-being would allow the possibility of prospering or, otherwise, languishing. Consequently, when the possibility for humans and other living beings to flourish is restricted by actions and practices that are intentional, preventable, and foreseeable, and such actions and practices compromise their well-being, a harm is caused (cf. Schwendingers, 1970).

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Expanding on this idea, one could argue that every entity – of which it makes sense to say that it has the possibility to flourish – could also be susceptible to harm. Thus, practices and actions that compromise an entity's possibility of flourishing could also qualify as harmful. In what follows, I point out some arguments as to why and to what extent, it may make sense to say that ecosystems have a potential to flourish and are therefore prone to be appropriately harmed. Provided that a situation is possible in which the instrumentalization of certain ecosystems contributes to the provision of a minimum threshold of well-being for human beings but does not result in damage to these ecosystems, it will be possible to distinguish resource exploitation or harmful instrumentalization from non-harmful or 'sustainable' instrumentalization.

Exploitation and observable harm

Building on the definitions of harm outlined so far, in this section I examine the extent to which the exploitation of resources amounts to harmful instrumentalization of the ecosystem from which these resources flow. In general, the instrumentalization of an ecosystem is considered to be of philosophical relevance when it results in the depletion of the resources that the ecosystem provides. As noted above, this is most prominent when the ecosystem in question cannot longer provide humans with the resources that are vital to them. In relation to so-called renewable resources, depletion means using, extracting, or developing resources in quantities and at a rate that threatens the very existence of the ecosystem that provides them. However, it is possible to think of situations in which an ecosystem continues to exist, even providing humans with vital resources, but having undergone harms that can be made evident. In this section, I suggest that not only the quantity of instrumentalization, but the quality of it, can be harmful to ecosystems.

So far, I have distinguished states of harm from other states of discomfort by providing with the severity and controllability conditions. Accordingly, harm is not only a momentary sting caused by one person to another but according to some, occupies 'the most serious forms of social practice' (Lasslett, 2010, 13). One could argue that these states, however, are not limited to states experienced by human beings. In other words, the perception of suffering and pain may be sufficient indicators of the absence of a minimum threshold of well-being in the case of sentient beings, both human and non-human. Even in relation to sentient beings in general, one could argue that there are situations in which perception is not necessary for harm to occur. For example, someone can be under the influence of some narcotic drug and be unarguably the victim of physical or psychophysical harm. Assuming that this person values their physical and psychological health as an essential element in their ability to lead a flourishing life, the lack thereof implies a harm to this person. This is regardless of whether they are in pain or not.

Hence, there are those who consider that harm refers to the restriction of the potential for flourishing through actions, practices or relationships that are identifiable (Pemberton, 2016, 18). As noted above, it is often thought that non-human entities or 'mere things' cannot be harmed directly, but in an extended or derivative way. For example, if my phone breaks, there is no setback in any interest in the existence of the phone itself, but a setback in my interest in communicating through it, hence the harm. The same would be true for more complex things, for example, computers: If a component of a computer is fundamentally altered, it is likely that the computer will stop functioning as it normally would and therefore be labelled as 'damaged' not as being harmed. If, nevertheless, the necessary conditions of harm are severity and controllability and, on the part of the one who is subject to it, the possibility of flourishing, the notion of harm may be extended to some of the more complex 'functioning wholes.'

Within the field of ecology, collective non-human entities such as ecosystems can be described as consisting of living and non-living components, which interact to form a 'stable system' (Tansley,

1935). Ecosystems are often characterized by being dynamic, complex, and functional systems, which have the capacity e.g. to evolve and sustain themselves through different forms of life, relationships, and interactions with their environment (see Odum, 1994). From this perspective, ecosystems can be understood as complex, relational and collective 'entities' that are dependent on their components and can cease of functioning. Still, this does not mean that they have a possibility to flourish and languish. One could think that the possibility of collective entities, such as colonies, herds and also ecosystems, to flourish is reducible to that of the individual beings that compose them, so that reasoning about their flourishing is reducible to reasoning about the flourishing of individual beings.

Underlying this premise is that the capacity for something to flourish is attributable only to those entities that have a life of their own. Hence, if collective entities lack characteristics such as reproduction, growth, and death, they cannot flourish. In this respect, authors such as O'Neill (1992) have argued that even if it does not make sense to say that collective entities have life in a literal sense, it does make sense to speak of their life in a metaphorical sense. Such an attribution of 'life' is sufficient to speak of that which is good of these entities and thus of the conditions necessary for them to flourish and be impaired in a non-metaphorical sense. For instance, it makes sense to speak of what is good of a corporation, given the kind of entity it is, without reducing its 'welfare' to that of their members (O'Neill, 1992, 130). In the same way, it makes sense to talk about what is good in an ecosystem and, therefore, about what constitutes a state of well-being for it. In the same way, it makes sense to speak of what is good in an ecosystem and, therefore, of what could constitute a state of 'welfare' to it.

In this sense, it may be possible to identify the conditions under which a given ecosystem, given its characteristics, functioning and capabilities, can flourish, and thus the conditions under which it cannot. In the case of a given ecosystem, as in the case of any other living thing, it seems uncontroversial to say that practices and actions that cause its death or cessation of existence constitute a clear impediment to its ability to flourish and can therefore be considered as harmful; depletion of the ecosystem marks this point. Though, an ecosystem may still be 'alive', may even continue to provide resources to humans, and yet not function as it did before being instrumentalized as the type of ecosystem it was. More specifically, if an ecosystem is intentionally and controllably instrumentalized and that instrumentalization results in the ecosystem's inability to return to functioning, after the instrumentalization, substantially as the same type of system it was before the instrumentalization – disrupting its loose integrity (Crescenzo, 2013) –, the ecosystem can be qualified as directly harmed.

If the rainforest trees mentioned throughout this paper are harvested in such a way that the forest cannot retain its ability to function at a minimum level above which it makes sense to say that it can flourish, even if the forest is not depleted, it makes sense to say that the forest has been harmed. To the extent that this state is observable or identifiable, the practices and actions that give rise to it may be preventable. Indeed, even if states of harm are not identified at the time they occur, the consequences of certain instrumentalization actions and practices could be foreseen and thus prevented. For example, through instrumentalization practices and actions that have proven to be harmful in the past. One possibility to infer the consequences of instrumentalization actions and practices to prevent those that are harmful could be, theoretically at least, to establish a criterion to determine the functioning and capacities of an ecosystem and, according to that criterion, collect information on whether or not ecosystems have been harmed.

In this sense, modifying the conditions that give rise to observable harm to ecosystems, and not only to humans, could potentially translate into measures to prevent it. In short, to the extent that it is possible to foresee the harm resulting from resource exploitation, it may be possible to consider a way of relating to certain ecosystems, especially those that provide vital resources to humans, that is not harmful to them.

Conclusions

Resource exploitation can be considered harmful to humans and other living beings insofar as it jeopardizes a minimum threshold for their well-being. Resource exploitation is not always regarded as such with respect to the ecosystems from which those resources flow. Since the use of and access to certain ecosystems is usually justified on the basis of human interests and needs, only instrumentalization practices and actions that destroy ecosystems are considered harmful. Yet, the disruption of the loose integrity of an ecosystem could also qualify as harmful, even if the ecosystem is not yet depleted. In this paper I have discussed two concepts of harm and have argued, firstly, that ecosystems can be directly harmed and, secondly, that while depleting them is harmful, especially to those who depend on them, resource exploitation can already qualify as such, namely to the ecosystems themselves. It is therefore not only the quantity in which an ecosystem is instrumentalized that can be harmful, but the quality in which it is carried out. From there, the conditions of observable harm caused to ecosystems by certain practices and actions of instrumentalization could be further explored.

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