Towards an interspecies health policy : great apes and the right to health

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5. The right to health: its social, interspecies, and ecological determinants

In the previous chapter, the avoidance of pathological suffering and having the opportunities which health as an internal ability provides have been indicated as grounds for rights protection. We should now take a closer look at these two factors and their implications. What does a right to health involve in terms of its content and correlative duties? We require a type of decision rule in order to (a) assist in establishing the level of health of individuals that needs to be safeguarded and to (b) specify correlative duties.

Jonathan Wolff sets off from the premise that the human right to health involves protection against standard threats to health. Perhaps such a minimal conception provides a solid starting point to further explore a plausible account of a hominid right to health. Assuming this is indeed the case, such an understanding does face at least two specific challenges that require our attention. Concerned about unjustified paternalism, certain scholars argue in favor of restricting the scope of health-related duties (Weinstock 2011). Furthermore, a broad perspective on health duties invites the Herculean task objection: it is very difficult and costly to include each and every determinant of health (Tasioulas & Vayena 2015). Should we merely focus on medical services and public health measures?

The present chapter will address these objections and bring them to bear on the health of great apes. Moreover, it will consider the extent to which correlative duties to the right to health can be viewed in isolation from ecological interdependency. Instead of limiting duties to the medical realm, we should broaden the scope of relevant determinants to include ecological ones.

5.1 The need for a decision rule

The human right to health is a so-called socio-economic right which has been acknowledged in Article 12 of the UN International Covenant on Economic, Social and Cultural rights. A ground for the recognition of the legal right to health as well as the possibility for individuals to claim their rightful entitlements is hereby provided. However, this thesis presents a more restricted scope by means of focusing on moral rights – that may or may not give rise to legal counterparts. As discussed in previous chapters, the interest-based theory of rights creates a coherent and plausible understanding of moral rights, including the right to health in the way it captures health interests.

The question now rises: if the health interests of humans and great apes are sufficiently important to impose duties upon others, what does this involve specifically? What can be required from the duty holders? It would be unfeasible to guarantee a status of health because health for an important part depends on biological processes beyond our control (Wolff, 2012a). Thus, no matter how much money is spent, it remains impossible to for once and for all prevent any disease from occurring (Rumbold 2015). One suggestion is to guarantee access to health care, so that if one suffers from ill health, ample possibilities exist to regain one's health by means of undergoing medical treatment. However, this paints an incomplete picture of the dependency and vulnerability of health. Numerous social determinants of health lie beyond the access to health care. For example, one's geographical location, income and education may all heavily influence one's health. When merely focusing on health care, a significant blind spot remains. Furthermore, if the right to health is based on one's interests, then duties to safeguard the access to health care and policy aimed at the social determinants of health are not categorically different. Health can be protected in many ways including, but not restricted to, health care only. The right to health cannot guarantee health, but it may impose a range of duties upon others to support and protect health.

Which level of protection does the right to health require? The number of resources available to research and the investment in specific medical treatment options are clearly limited (Rumbold 2015). Theorists have developed several decision rules, which contribute to determining the demands of a right to health in terms of its corresponding duties. Rumbold (2015) presents us with a helpful overview. It has been argued that the only limitation is technological in nature (Outka 1974). This observation entails that everything that is possible given the current state of medical technology falls within the scope of the right to health. Needless to say, this is much more demanding than providing basic health care and/or public health measures. The UN account, as discussed briefly in chapter 4, stipulates that the right to health entitles the rights bearer to "the highest attainable standard of health". Such a formulation is fraught with ambiguity, as one may either infer from this too low a standard or require everything possible instead (O'Neill 2005; Rumbold 2015; Wolff 2012b). This ambiguity, in turn, has led many to "attempt to tie the limit of the content of the right to health to a certain conception of what constitutes a reasonably healthy life" (Rumbold 2015: 10), often defined in the light of a standard of health within a particular group or community.

5.2 A modest account: protection against standard threats to health

Jonathan Wolff (2012b) suggests understanding the demands of the right to health in terms of protection against the standard threats to health.[68] Rights holders can only be protected against violations of their right to a certain degree. Protection against standard threats to health entails that the right can only impose duties upon others when threats to health are serious enough and when they are standard. Determining whether a threat is serious enough will on occasion be clear, such as in the case of broken bones. Of course, moving along the continuum between indisputable serious threats on the one hand to very minor threats on the other will involve a grey area, but "the borderlines are fuzzy but not impossibly so" (Wolff 2012a: 222). The difficulty of drawing a line along this continuum is inherent to the specification of rights rather than a disqualification of the right in question. A prima facie right requires specification pertaining to concrete demands in practice, as discussed in previous chapters.[69]

Perhaps a more difficult issue will comprise the determination of when a threat to health is standard. Wolff opines that the state of technological advancement determines to a certain level whether a threat is standard.[70] The discovery of antibiotics as well as their widespread availability provides an important condition to consider bacterial infections as standard threats in the sense required. Old age as "a natural cause of death" does not involve a standard threat, not because death or the process of dying is not serious but as a result of the impossibility of (yet) prolonging human life indefinitely. Perhaps death due to natural causes will become a standard threat to health in the future (Wolff 2012a). Given the current state of medical technology, substantial prolongation of human lifespan remains futuristic.

Does this render the classification of standard threats completely contextual? Wolff holds the view that this is not the case whereby he challenges the relevance of one's socio-economic context as being a determining factor of standard threats. In his opinion the fact that options of treatment are limited for many people living in developing countries, for example, does not discount the recognition of HIV as a standard threat for all humans. The existence of medical treatment of, and preventive measures against HIV/AIDS, causes HIV to present a standard threat to all humans.

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[68] This insight can for instance be traced back to Shue 1996.
[69] For a discussion on the right to health care as a prima facie right that needs to be specified in the light of the interests of others, see Cochrane 2012: 45-6.
[70] Wolff does not go as far as Outka who reads the demands of the right to health directly from the current state of medical technology.

Pertaining to each and every standard threat to health, "a solution could reasonably be expected to be in reach, either because treatment could be made available on a routine basis, or because the condition is widespread and urgent and there is every reason to think that the normal processes of scientific research would lead to a solution" (Wolff 2012a: 223).The threat should be susceptible to preventive and/or curative measures within reasonable and feasible limits. The current state of medical technology and knowledge proves to be more than sufficient at successfully treating patients who suffer from injuries e.g., uncomplicated fractures. Moreover, treatment can be made available on a routine basis and will generally not be hugely resource demanding.

Matters differ whenever novel infectious diseases confront us. In 1982, once the CDC (Centers for Disease Control and Prevention) provided a detailed case-description together with the abbreviation AIDS (Acquired Immune Deficiency Syndrome), major efforts made from 1996 on have resulted in the possibility to suppress HIV from developing into AIDS.[71] If treatment was as yet unavailable, HIV/AIDS still represented a standard threat under the assumption that medical technology would be able to lead to a solution.[72]

In sum, Wolff proposes two conditions pertaining to the right to health, to wit, it should (a) protect individuals against serious threats to their health and (b) be reasonable as well as feasible to avert the threat. In that sense, Wolff's account provides basic protection which, at least, involves access to health care. Such access presupposes the availability of resources for pharmaceutical research, which not only serves to improve medical treatment of existing threats as well as the capacity to address novel emerging infectious diseases. In order to safeguard basic protection, the right to health determines, by means of its understanding of all that standard threats entail, how resources should be distributed as to support not only health care infrastructure but also its associated research strategies.

Standard threats to health do not limit health duties to curative measures only. As indicated above, if the right to health is based on one's interests, then it is not clear why one should differentiate between an access to health care and a policy aimed at the social determinants of health. It is argued that, "There are many determinants of health, with health care being only one, and perhaps not the most important when compared to hygiene, sanitation, nutrition and

[71] https://npin.cdc.gov/pages/hiv-and-aids-timeline [accessed 25 March 2019].
[72] Of course, in addition to preventive measures (education, providing condoms).

adequate housing" (Wolff 2012a: 222). By arguing for protection against standard threats, Wolff prevents the right to health from claiming too much on the duty holder's account, while at the same time including all relevant threats irrespective of their nature. These threats not only include direct threats (e.g., infectious diseases, bodily injuries, threats of a more indirect nature). Inadequate hygiene and sanitation may, for example, facilitate opportunistic pathogens. Nutrition can be inadequate in many ways, for example, by means of lacking important elements or by a mismatch between one's daily caloric intake and daily caloric need. Micronutrient deficiencies can have various negative consequences such as preventable blindness in children due to a lack of Vitamin A, anemia and a weakened immune system as a result of iron deficiency.[73] The consumption of high caloric food, as an example of abundance rather than of a deficiency – albeit frequently accompanied by nutritional deficiencies too – can lead to obesity, increasing the risk of developing cardio-vascular symptoms and decreasing one's life expectancy.[74]

Importantly, the underlying drivers of these different nutritional inadequacies are very much socio-ecological in nature. Micronutrient deficiencies, food insecurity, and hunger often result from political instability (Sen 1983). The global rise of obesity has been explained in part by the concept referred to as "obesogenic environments", which is defined as "the sum of influences that the surroundings, opportunities, or conditions of life have on promoting obesity in individuals or populations" (Lake & Townshend 2006: 262). People residing in urban environments are systematically exposed to marketing and to the abundance of unhealthy food options, rendering it a challenge to maintain a wholesome and balanced diet. Eating healthily may involve more effort, knowledge and financial means. This observation illustrates the necessity to investigate the socio-ecological determinants pertaining to health in order to establish a sound survey of health and its vulnerabilities. To limit one's attention to health care would presumably lead to a largely symptomatic way of dealing with health problems such as nutritional deficiencies and obesity (Lang & Rayner 2012). As a consequence, this line of reasoning could result in a very wide range of duties called for by the right to health, which may well be problematic too.

Before looking into this range of duties, one could object that I have not argued why we should accept Wolff's account in the first place. To what extent is his account correct? In the

[73] http://www.who.int/nutrition [accessed 15 March 2017].
[74] http://www.who.int/mediacentre/factsheets/fs311/en [accessed 15 March 2017].

previous chapter, I have put forward the claim that one's basic health needs carry sufficient weight in order to impose at least a number of duties upon others whereby the interests in health as plausible grounds are considered to acknowledge a prima facie right to health. Generating a right on such an account depends on our judging the underlying interests as sufficient to impose duties on others. By depending on rather uncontroversial assumptions, I believe Wolff's minimal proposal regarding the demands of the right to health in terms of protection against standard threats does indeed provide a plausible understanding of the right to health. Wolff first of all improves upon the ambiguous formulation of the demands of the right to health as "the highest attainable standard" by proposing the much clearer formulation of protection against standard threats instead. Furthermore, the condition of protection against standard threats is plausible in itself. I assume that numerous serious threats to health carry sufficient weight to impose at least several duties on others, especially given the moral bedrock that compassion provides. Moreover, because Wolff understands standard threats largely in terms of urgency, reasonableness, and feasibility, the demands of the right to health follow from rather intuitive premises. This is the reason why I hold the view that Wolff's account presents us with a plausible formal understanding of what a right to health would at least involve.

To summarize this section, the right to health imposes duties on others to the effect that individuals are protected against standard threats to their health. In order to be standard, threats first of all need to be serious enough, which inevitably involves a grey area, requiring specification in the light of the interests of others. Because threats also need to be standard, certain normative presuppositions are involved concerning the possibilities of current medical technology and policy in order to either make treatment available or to avert threats to health in other ways.

Now that we have established an idea of what a prima facie right to health involves in general terms, we must discuss the appropriate range of health-related duties in order to put some flesh on the bones of these obligations. Should it be restricted? In 5.3 (see below), I will discuss two objections against a wide range of duties.

5.3 The right to be unhealthy?

Wolff has a point when he argues that the right to health should not be disconnected from the various determinants of health as they often play a definitive role with regard to the health

status of individuals. However, several issues require our attention before exploring Wolff's proposal slightly further. One can object his account is problematic because it leaves open the kind of duties which the right to health imposes. By arguing for a protection against standard threats to health rather than an access to health care and a number of public health measures (such as vaccination campaigns), Wolff's right of health will impose too wide a range of duties.

The underdetermined nature of health-related duties could prove problematic for example by (a) allowing for unacceptable levels of paternalism. Certain individuals may wish to engage in unhealthy behavior, even fully aware of its possible negative health consequences. In addition to concern for such meddling, (b) a potential broad range of health-related duties not only demands Herculean efforts but also invites chaos with regard to connecting rights, duties, and duty holders. This is the reason why some favor a right to health limited to a distinct range of health-related duties.

As to the aforementioned issue (a), one may worry that the right to health implies measures that curtail the freedom of individuals to live their lives on their own terms, even if this implies certain risks affecting their health on the short- or long-term. Weinstock (2011) invites us to imagine political ramifications of a supposable positive effect of vacations spent in cold places on one's lifespan when compared with beach holidays. He opines the state should not send people into the cold. Protecting individuals against threats to health is limited by means of a reference to individual freedom. The same goes for other forms of behavior (e.g., extreme sports, smoking). From a liberal viewpoint, people should be allowed the freedom to engage in such behavior. I agree with Weinstock (2011: 432) when he argues that "the question of the line separating defensible from excessive paternalism is very much a matter of ethical controversy".

In my view, however, it is morally unproblematic to restrict to some extent the behavior of non-autonomous beings in order to protect their health. One should even demand effective action at the level of social determinants of health for example by means of preventing children from starting to smoke and/or to suffer from the effects of passive smoking. The concern about paternalism does not appear to gain much traction when we turn towards beings who lack autonomy. Autonomy perhaps is a necessary condition for having "health-agency", the "freedom of choice in regards to decisions affecting one's health-level" (Nielsen

2014: 413). It is thus up to me, as an autonomous agent, to choose whether or not I will train for a marathon (leaving aside the extent to which such activity is healthy) and eat my greens. My ability (in principle) to be aware of the positive and negative impact of my behavior on my health in the short- and long term should arguably provide me with the opportunity to decide for myself; a line of argument that does not apply to non-autonomous beings. Certain great apes exhibit extraordinary abilities related to their own health, for example the ability to self-medicate (Huffman & Wrangham 1996). Nevertheless, this does not necessarily imply the awareness of one's actions pertaining to one's own health in the long- or even short-term. It is unclear if animals, even great apes, have health agency as described above, as this is part of an autonomous agency.

Though great apes might lack the specific type of health agency described above, they unmistakably have agency (as discussed in chapters 2 and 3) in terms of "self-willed or initiated action which carries an expectation of efficacy" (Donaldson & Kymlicka 2011: 180). Agency thus presents us with an important factor by means of which one's interest in freedom can be determined. These interests generate a prima facie right to freedom of opportunity. The question now rises: how do their interests in freedom relate to health?

Recalling the scaffolding of choice of non-autonomous individuals (see 3.5), it is here that Donaldson and Kymlicka explain this scaffolding as a necessary condition of dependent agency. Even if individuals lack autonomy, they can still make meaningful choices regarding their lives by means of expressing their agency. Scaffolding choices involves certain conditions that need to be in place in order for such individuals to develop and explore their agency: "starting from a safe and secure social membership, new activities, experiences, and learning moments are progressively introduced in ways that are meaningful" (Donaldson & Kymlicka 2016c: 64).

As will become apparent below, safeguarding health, at least the protection against standard threats, should be an element of such scaffolding. Whereas non-autonomous individuals have a right to freedom of opportunity, they do not have the ability (in terms of autonomous agency) to autonomously choose to engage in unhealthy behavior, as they lack health agency. Any concern about paternalism with regard to health promoting measures at the level of social determinants of health for non-autonomous agents then appears largely irrelevant. It is indeed apparently hugely plausible that any lack of autonomy requires paying increased attention to

the social determinants of an individual's health. The right to freedom of opportunity does however push back against an entirely paternalistic attitude. Great apes should have access to a range of opportunities that allows them to develop and explore their agency. The level of risk should reflect the tension between interests in health and employing one's agency, rather than only looking at maximizing health through all means available. Such balancing should also attend to individual traits; a difference in terms of risk-taking between individuals will exist (Donaldson & Kymlicka 2016c).

An overly protective attitude towards the opportunities of non-autonomous individuals could backfire. A recent systematic review into the relation between risky outdoor play and health indicators on the one hand and the conduct of children aged between 3 and 12 on the other "revealed overall positive effects of risky outdoor play on a variety of health indicators and behaviours, most commonly physical activity, but also social health and behaviours, injuries, and aggression" (Brussoni et al. 2015: 6424). Consequently, perhaps even slightly paradoxical, in order to safeguard the health of children, we should provide them with ample opportunities for "risky play".

Though children do not autonomously assess their conduct in terms of its long-term health effects, more freedom in terms of opportunities does have an overall positive health impact. Is there perhaps a similar relation between health and freedom of opportunity for great apes? Of course, as could be objected, findings in children aged between 3 and 12 may not inform us hugely about the relation between risky play and health of great apes. Nonetheless, I believe "risky play" does provide us with a telling example of how risk and health relate. At least, it challenges policies that restrict the freedom of great apes with the reason of safeguarding their health. How does a less restrictive environment affect the health of great apes? Empirical evidence must support such argumentation.

Concluding the discussion about the concern for abounding paternalism, I have argued that lack of health agency broadens the range of duties correlating to the right to health. However, lack of autonomy does not imply a risk-free environment. Interests in freedom and health should be assessed within their contexts. Furthermore, a less restrictive environment may benefit the health of individual great apes in line with research into the relation between risky play and health of human children.

5.4 Anything beyond the medical?

Instead of feeling concerned about any unwanted paternalism, one might consider the fact that a broad account of the right to health, attuned to all possible social determinants of health, may be problematic for the heftiness of the demands it imposes:

> The mistake is to identify the right to health with all the rights that serve our interest in health. Many, if not all, human rights protect our interest in health because they protect a range of interests that includes health as one among others. However, a human right is picked out not by the profile of interests it serves but rather by reference to the obligations it creates. The right to health is best interpreted as concerned primarily with obligations regarding medical services and public health measures. (Tasioulas & Vayena,2015: 43)

The concern voiced by the authors appears to be that the right to health becomes the center of gravity with respect to other rights. The right to education, for example, should not be explained in terms of a right to health, even if there is a significant overlap with health interests. Whereas education could be an important social determinant of health, when for instance providing knowledge and developing one's health agency, the right to education does not only exist to serve one's interests in health.

Needless to say, health is not the only thing that matters. Perhaps the reason for Tasioulas and Vayena to wish to restrict the range of duties is that if the right to health would encompass other rights (e.g., the right to education) the interests in education that do not overlap with the interests in health may then be obfuscated. In other words, something may get lost in the course of creating an ever-expanding right to health.

However, something may also go to waste in the process of neatly separating rights from each other. For example, why would it be problematic for the right to health to instill a duty to promote health agency of humans by means of education? Indeed, the right to education does not exist solely to serve one's interest in health. The right to health may however impose certain demands in terms of the content of education that might not arise if these rights would be kept in separate boxes. If the right to health and the right to education were to remain distinct then the importance of education in terms of health agency could remain unnoticed.

Thus, narrowing the scope of duties for fear of the right to health becoming the sole overarching right could have negative consequences in itself. Tasioulas and Vayena argue that the right to health is distinctive considering the obligations it imposes rather than the interests it protects. It is nonetheless by no means clear, especially considering their adherence to an interests-based theory of moral rights, why we should accept this claim or their conclusion that "The right to health is best interpreted as concerned primarily with obligations regarding medical services and public health measures" (Tasioulas & Vayena 2015: 43). They owe us an explanation as to why specifically the right to health is conceptually linked to this domain of duties.

The position Tasioulas and Vayena hold with regard to the nature of the right to health is perhaps more pragmatic. In addition to their stance pertaining to the distinctiveness of rights and their corresponding duties, they also voice a very practical concern:

> If we follow the inclusive account to the right to health, we will face an unnecessarily Herculean task in our attempts to assess the extent to which the right to health is being fulfilled worldwide. This task will be so huge because it will require keeping track of the extent to which all rights that affect health are being met. Progress towards such a massively sprawling goal is challenging to monitor and extremely difficult to achieve, and will inevitably breed uncertainty, frustration, and despair. If we wish to set ourselves a more meaningful and manageable, but still demanding, task then we should adopt the more constrained interpretation of the right to health. (Tasioulas & Vayena 2015: 43)

Therefore, even if we would be able to flesh out a range of duties corresponding to the right to health reaching beyond the domain of medical services and public health measures and do so in a manner that seamlessly integrates with other rights, then the hard work has just begun. Apparently, this troubles Tasioulas and Vayena more than the issue of keeping rights separate in order to protect their distinctive purpose.

Identifying duties would indeed be a Herculean task. However, I do not see why arduous work would restrict the range of duties. When feasibility is not an issue, why should we distinguish between various sorts of duties if they all contribute to safeguarding health?

Furthermore, measures aimed at the social determinants of health are perhaps not always more challenging than medical services and public health measures.

We are now left with the conclusion that the range of duties imposed by the right to health remains rather unspecified. It remains unclear why the right to health is distinctive in the duties it imposes rather than the interests it serves. Moreover, it is important to take the determinants of health more seriously hereby including not only those related to socio-economic factors but also the underlying ecological determinants of health. A right to health whenever neatly disconnected from ecological considerations would overlook the ways in which humans and other animals intricately form parts of ecosystems, while depending upon these ecological processes for their health. Such a perspective on the right to health would leave out a necessary condition of individual health. Based on the above argumentation, it is unclear why the right to health should not include ecological determinants of health if these contribute substantially to health. The question now rises: to what extent should the right to health include ecological determinants of health?

5.5 Ecological and interspecies determinants

As is apparent from the discussion presented in chapter 1, the idea of One Health with its emphasis on interdependence between humans, animals and environment challenges a conception of public health that draws the line of relevance at the borders of human society. Alternatively, humans, just as other animals, form an inextricable part of ecological processes, which entails that health policy and understandings of health need to attend to the ecological conditions that support health (Coutts et al. 2014; Lang & Rayner 2012).

The relation between individual health and ecological processes will generally be rather complex and indirect. As to climate change, for example, the impact of human activity on the natural environment is significant and far beyond any reasonable scientific doubt.[75] Of course, the effects of climate change will reach beyond the right to health and hugely perturb human societies. The upsurge of inhospitable climates including rising sea levels, extremely high temperatures and droughts imposes a vast threat to human health (Caney 2010). These touche upon the ecological conditions of human health. We rely on ecosystem services and the natural environment in general to safeguard our health (McMichael 2009).

[75] http://www.ipcc.ch/publications_and_data/publications_ipcc_first_assessment_1990_wg1.shtml [accessed 20 March 2017].

As I have argued above, the interests it protects rather than certain specific duties determine the right to health. If we understand this right in terms of protection against standard threats, then we should also include those threats that arise at the level of ecological determinants. Of course, a great overlap with other rights will now be encountered, such as the right to food and environmental rights, many of which make sense precisely because of their relevance to health.

If ecological conditions are important and necessary to support individual health, they significantly implicate our interactions with the rest of the natural world. Moreover, if a certain level of ecological functioning is presupposed as part of the protection against standard threats to health, one may hold duties in order to secure the ecological conditions of others irrespective of one's role in bringing about the disadvantaged situation. In any case, acknowledging the moral importance and relevance of the ecological determinants of health requires a further specification of the relation between individual health and ecological processes. If an ecological outlook on health proves invaluable, what does this imply for the individual right to health?

The relation between individual health and ecology has been described in part by the notion of "ecological space" (Hayward 2013b). Ecological space reflects the measure of natural resources and ecological processes individuals require for living their lives. This understanding goes beyond any specific environment individuals happen to find themselves in. The relation between the ecological processes and one's individual health is much more abstract: "the concept of ecological space allows us to picture the world in terms that are not captured by purely physical or geographical descriptions of space. The relevant space is defined more critically by function than by physical dimension or magnitude" (Hayward 2013b: 234). For their health, individuals depend not only on their immediate environment, but also on more complex ecological processes more peripheral. Ecological space captures this ecological interdependency in descriptive terms.

Ecological space also involves a metric of justice, by drawing out the necessary biophysical conditions to live a minimal decent human life. In accessing ecological space as a matter of justice (a) we are confronted with the "finitude of the earth's aggregate biophysical capacity" (Hayward 2013b: 236). If there was an abundance of biophysical capacity, then considerations of distributive justice would not be so urgent. However, the availability of

biophysical capacity is significantly restricted, thus prompting questions concerning a morally right and fair distribution of such resources.

In other words, if humans hold a right to health, and health is the contingent result rather than isolated from socio-ecological interdependency, then the right to health demands that we pay attention to the underlying factors that significantly shape and determine health outcomes and acknowledge duties to secure protection against standard threats to health.

The above is all the more relevant when considering the reason (b) pertaining to the fact that "some humans make vastly more use of the planet's ecological space than others do" (Hayward 2013b: 236). One's ecological space is vulnerable to the irresponsible and unjustified utilization of that space by others. For example, individual A consumes much more ecological space than is necessary when leading a decent life, to the extent that individual B is deprived of the natural means to lead a decent life. If there is enough ecological space for both, then it is unfair for individual A to appropriate more space than required to individual B's disadvantage. Access to sufficient ecological space is a necessary condition to protect basic interests of humans. If the concept of human rights in terms of protecting at least the ability to lead a decent life is taken seriously, the right to ecological space is a demand of justice, and

> the basics of justice … include a universal right of access to the necessary means for a decent life. I take it as axiomatic that there is this fundamental right: for if there were not, then the very idea of human rights would be hollow; and if we could not rely conceptually and normatively on the idea of human rights as a touchstone for ideas of justice, I doubt we could talk both cogently and persuasively about global justice at all. As a material premise, I take it that the means of life necessarily and importantly include biophysical resources; biophysical resources, compendiously, can be referred to by the term "ecological space." From these premises it follows that a right of each human to a sufficient allocation of ecological space is a human right. (Hayward 2009: 293)

Therefore, each and every individual, as a matter of justice, should have access to sufficient ecological space in order to live a decent life: a distinct right to ecological space. The demands for a right to ecological space and for the right to health substantially overlap: access

to sufficient ecological space cannot be separated from a complete overview of health and its vulnerabilities. Instead of neatly demarcating health from environment, this overlap should usher us to take seriously the inextricability of health and environment.

My aim now is to further articulate how the concept of ecological space relates to the right to health, and in particular how this concept relates to the right to health of great apes. Of course, just as humans depend upon ecological processes, so do great apes. Ecological space, as a descriptive term, is by no means limited to humans only. This term captures the individual dependency on ecological processes irrespective of species membership. What can be said about its normative implications?

Hayward notes that while his focus lies with the human right to ecological space, the exclusion of animals is done out of pragmatic rather than principled reasons. As argued in the present thesis, sufficiently weighty interests can generate the protection of rights. Are the interests of great apes in ecological space of sufficient weight to generate a moral right? Great apes not only share numerous interests in ecological space with humans, they also depend on ecological processes for their health and well-being just as humans do. I have argued that understanding the right to health in terms of protection against standard threats should also include threats of an ecological nature. We should do so because of the importance of the interests in health. Whether a threat to health can be addressed at the ecological or medical level does not make a moral difference if one accepts the understanding of standard threats as Wolff proposes. As I have stated above, threats should be both serious and standard, which involves certain normative presuppositions regarding the possibilities of current (medical) technology and policy to either making treatment available or to averting threats to health in other ways. If one includes social determinants of health as relevant to the right to health, I do not see why ecological determinants of health should be excluded. If threats to health are indeed ecological and the above-mentioned (serious and standard) conditions apply, then the right to health in principle requires protection against these threats.

The negative impact of climate change presents us with a telling example of an ecological threat to health. Which other ecological threats to health might warrant protection by rights? In addition to the direct threats to great apes in terms of bush meat hunting and wildlife trade, human encroachment and impact on habitats (ranging from extraction of resources to destruction) could impose all kinds of threats to the health of great apes in the wild. Specific

threats include food shortage (Hockings et al. 2015), stress-induced immune-deficiency due to human interference and/or hierarchical instability (Williamson & Feistner 2011), loss of genetic diversity (Krief et al. 2014) and transmission of human diseases to great apes (Köndgen et al. 2008).

These examples serve to reveal another aspect of ecological space that Hayward does not discuss in detail. Whereas the concept of ecological space appears to be primarily engaged with ecological conditions in terms of quantity of biophysical resources, there is also a qualitative aspect to ecological space. It is not only a matter of having enough, but also having something good enough. Ecological processes support individual health e.g., by providing water, air and food. However, the configuration of landscapes and socio-ecological interactions can also be assessed in terms of risks to health. For example, habitat destruction does not only involve a direct harm to the animals depending upon it and imply a far greater use of natural resources by some to the disadvantage to others. It also increases the risk of emergence of infectious disease by decreasing biodiversity and increasing human-wildlife interaction. Ecological space should include not only biophysical resources but also require the kinds of socio-ecological interactions that minimize the risks of disease emergence. The interplay between socio-ecological interactions and disease emergence illustrates the need for acknowledging ecological determinants of health beyond biophysical resources: interspecies determinants of health. When left unattended, these determinants may give rise to "unhealthy landscapes" (Patz et al. 2004); a metaphor that reflects the level of health threats inherent to specific ways of land use and configurations of the human-animal interface.

Identifying infectious diseases as standard threats to health is only part of the entire story. Their emergence cannot be disconnected from ecological drivers. Ecological interdependency is relevant to health, not only because of ecological services (e.g., clean water, air) but also because certain configurations of socio-ecological interactions can lead to higher chances of infectious disease emergence. A right to health should not be disconnected from these considerations except for cases where the aim is to evaluate certain well-defined health needs that do not require a detailed discussion of underlying ecological conditions. Hence, one could still determine whether individual A should be entitled to a specific medical treatment procedure without the involvement of ecologists. However, protection against standard threats to health should include ecological and interspecies determinants of health, which

respectively entail the biophysical resources necessary for health and the requirement that socio-ecological interactions themselves do not inherently involve unacceptable levels of risk.

How does ecologizing the right to health – emphasizing ecological determinants of health – relate to recent proposals of recognizing animal habitat rights (cf. Cooke 2017)? As individual animals have significant interests in their habitat with regard to their own health and well-being, Cooke argues that animals have habitat rights. How does this differ from an emphasis on ecological determinants of health? Before discussing this view in more detail (see 6.3) I would for now like to point out that the right to habitat differs somewhat from the proposal to safeguard access to ecological space. While both accounts emphasize ecological determinants of health, ecological space is not restricted to habitat only, as it portrays a measure of biophysical capacity that every individual requires in order to lead a decent life. Ecological space thus also demands that attention is paid to biophysical processes unfolding beyond one's own habitat.

Socio-ecological factors encountered outside of one's habitat may be highly relevant in terms of health. Securing habitats might prove insufficient in the face of, for example, climate change. Even if habitats are protected, the spillover effects of human activity (e.g., climate change, risks of transmitting infectious diseases, residue materials etc.) may impose standard threats to health. This is the reason why, in addition to securing habitats, we must evaluate encroaching socio-ecological factors too (Donaldson & Kymlicka 2011). Therefore, while habitats are relevant when providing the necessary conditions for health and well-being, they do not capture each and every ecological and interspecies determinant of health. As great apes are subject to the ever-increasing effects of human activity on their environment (Hockings et al. 2015) an obligation is placed on humans to investigate the effects of their activities in order to prevent, as much as is reasonably possible, any serious human-induced health threats.

5.6 Concluding remarks

In the present chapter, Wolff's rendition of the right to health in terms of protection against standard threats has provided a starting point to develop it further against the background of ecological and interspecies interdependence. Before doing so, I have explored two possible objections to his account to arrive at the conclusion they do not succeed. However, Wolff's account should also include ecological determinants of health. In order to achieve this goal,

the concept of ecological space should be taken into account (Hayward 2013b). In relation to the right to health, ecological space can be further developed by means of looking into (a) the amount of ecological space every individual requires (ecological determinants) and (b) the level of threat arising from certain socio-ecological configurations (interspecies determinants).