Candidate #403004 Spring 2018 SUM 4030 University of Oslo

THE ENVIRONMENT: A RISK OR AT RISK?

How Risk Perception Frames the Problems and Solutions Around Climate Change

In Response to Exam Question #1:

"Discuss the role of philosophical ideas (such as deep/shallow ecology) as well as political ideologies in influencing human perceptions of nature and solutions to environmental crisis."

5,377 words / 24,895 characters (without spaces)

TABLE OF CONTENTS

I. INTRODUCTION		1
II.	THE ROOTS OF RISK	2
III.	SOWING THE SEEDS OF (IN)SECURITY	4
IV.	THE ENVIRONMENT: A RISK OR AT RISK	6
V.	TOWARDS AN ECOCENTRIC SECURITY	8
VI.	CONCLUSION	9
V. REFERENCES		11

I. Introduction

As the effects of climate change become a reality, we are encouraged to re-examine the entire basis that formed and drives modern society forward. Climate change may unfold into one of the greatest threats to our species (Foster, 2013). "It is a challenge that has politicians arguing, sets nations against each other, queries individual life choices, and ultimately asks questions about humanity's relationship with the rest of the planet" (Maslin, 2014: xvii). In a society preoccupied with threat and consequence, this paper demonstrates how risk perceptions shape both the problems and solutions around the current ecological crisis.

When risk is deconstructed, uncertainty, vulnerability, and value are discovered as the primary pieces that shape what is perceived as risk. This paper begins by examining vulnerability and discusses the difficulty in finding underlying drivers. Value is then assessed, examining how one values and how that shapes ideologies. When applied to nature, understandings of its value as either for *humans* or for *itself* create a rift in human responsibility. A differently prioritised or assigned moral status manifests in views such as anthropocentricity and ecocentricity. As value is also a prerequisite of risk, these views become the foundation for how the world is perceived, and thus provides a lens for what is considered at risk.

How risk is perceived frames the notion of (in)security, which directly shape who is to be secured and from what. This is done through a process of securitization, whereby risks are politically and socially produced and reproduced (Beck, 2007). Amidst the varying ideologies, there are two contrasting risk perceptions: the environment as a risk or at risk. These perceptions are at odds in that the environment is either understood through an anthropocentric lens as a threat to humans (human security), or through an ecocentric lens as threatened by humans (ecocentric security). This distinction is essential because it frames what the cause of risk (or problem) around climate change is. In acknowledging that the drivers of human vulnerability to climate change are anthropogenic, an interesting paradox unfolds: the environment is threatening humans, caused by human activity which has compromised the environment.

Ultimately, differing ideologies shape the way the environment is seen as a risk object (either to secure or to be secured from), which in turn frame perceptions of climate change: both problems and solutions. This paper concludes by recognising that the current anthropocentric perception of environmental security (as a subset of human security) stems from values and ideologies which may not accurately address the underlying vulnerabilities to and drivers of climate change. This paper asserts that to subscribe to the understanding of the environment at risk, urges the consideration of alternate ideologies which encourage systematic transformations for a more sustainable view of security.

II. The Roots of Risk

Uncertainty lies insidiously within all aspects of existence. The modern world has developed an almost obsessive relationship with uncertainty, whereby innovation takes the opportunity of uncertainty for its own benefit, and in return uncertainty takes the feeling of security. This causes deep-seated unease as "uncertainty courts surprise and invites the unexpected" (Nowotny, 2016: x). In a modern society, the ways uncertainty is dealt with have become trademarks of the 'risk society.' Here, the Western world has developed an insatiable desire to "colonize and control the future. Risk society is our late modern world spinning out of control" (Garland, 2003: 49). The term 'risk society' can be credited to sociologists Ulrich Beck and Anthony Giddens who employed it to describe the shift in means by which modern society handles insecurity: namely the need for the translation of unknowns and uncertainties into calculable, actionable risks (Arnoldi, 2009). This inherent and insidious uncertainty, coupled with insecurity and vulnerability creates the context for risk. Ideologies and values then influence how and what is and can be framed or perceived a risk. In an inherently uncertain world, risk builds simultaneously upon the construction or understandings of value and vulnerability (Beck, 2010).

In a world, seemingly-filled with uncertainty, actions are taken each day. To do this, Western societies have grown dependent on "reducing uncertainty" (Greenberg, 2017: 4) as much as possible into a quantifiable risk that can be used for decisions. This is done through various methods of risk analysis, which aim to define both likelihood and impact. To determine likelihood, these analyses are used to assess vulnerability. While vulnerability is often ill-defined or too vague, for this paper, vulnerability is understood as the "state of susceptibility to harm from exposure to stresses" (Adger, 2006: 268). In a risk analysis, relevant variables are outlined and the situation is assessed to determine to what extent the object of risk is exposed to a stressor. Stressors are most commonly seen through a hazard lens, whereby the hazard is the causal mechanism of the vulnerability (Greenberg, 2017), attributing the risks directly to the hazard. This method of attributing the risk to the hazard however, is not necessarily accurate as it fails to assess deeper causes associated with change and driven by an lack of adaptive capacity (Ribot, 2014; Adger, 2006).

In this sense, risk often stems from deeper vulnerabilities, which are entrenched in political and social situations. A group enduring poverty may be vulnerable to drought. Through a hazard lens, the drought is the cause of the vulnerability. When looking deeper however, the group may lack the ability to adapt to such stressors, which places the fault not with the drought, but in the group's lack of fundamental liberties (or empowerment) to reduce their own

vulnerability. "[T]he freedoms to act and to innovate follow from rights and representation" (Ribot, 2014: 697) and if said group lacks this freedom to affect their situation, it becomes clear that their vulnerability is not caused from the hazard itself, but rather from an uneven distribution of power. These political and social components thus involve responsibility (Beck, 2007), and as such are far more difficult to put into a quantitative risk analysis (than say the uneven distributions of environmental factors). "Understanding vulnerability is a prerequisite for understanding risk and the development of risk reduction and adaptation strategies to extreme events" (Cardona, et al., 2012:72). Finding only secondary or tertiary causality in social and political variables is thus problematic, as it incorrectly identifies the vulnerability drivers in the hazard. In essence, it treats the symptoms, but does not resolve the underlying factors which may be causing the infection.

Risk analyses also aim to assess impact or consequence. Impact is derived directly from what is valued, because risk is defined by a situation where something or someone (referred to henceforth as the *object*) of value is exposed to harm or loss (impact). In a risk setting, it follows then that something must have value for there to be impact or consequence. Once exposed, the object at risk is assessed, with the aim of understanding its value, and subsequently its impact. Action is then taken which preserves or eliminates such values. It is important to consider then who defines, and to what degree, something is to be valued, and whose values are prioritised (Beck, 2007; Ribot, 2014). In considering this, it is essential to hold a magnifying glass to the values themselves, with the aim of determining how they are constructed. Unfortunately, it is often taken for granted in risk analyses that we simply *have* values and views of the world. These are ideologies whereby "one's own personal code of values and a view of the world [...] guides one's own decisions" (Næss, 1989: 36). Given its centrality, one must consider *why* the world is viewed in these differing ways and *what* causes these differences in values when examining risk.

According to the previous definition of risk, only an object of value can experience risk. Value is then at the very core of what can and cannot be considered at risk, and must be examined as such. This requires the examination of what *makes* an object valuable, or how value is generated, and what ideologies then stem from such generation? To determine this, particular emphasis is placed on the contrast between instrumental and intrinsic values, and the resulting anthropocentric or ecocentric world views. Philosopher J. Callicott, argues that value generates *from* the human being, in each individual's consciousness (1986). This notion that "humans are the measurers, the valuers of things, even when we measure what they are in themselves" (Rolston, 1994: 15) holds that the *source* of value is the human being and is thus

anthropogenic. This value is commonly determined by its value *to* humans or it's instrumental value (Gamlund, 2007). In this case, the object is viewed as an instrument for human utilisation, and has a certain value because of that (Callicott, 1986). Here there is an ideological rift between something of value *for humans*, and something of value *for/in itself*. If the object is understood as having value *regardless* of humans, it is considered to have intrinsic value (Gamlund, 2007). This value is innate to the object and exists separately of any benefit to humans. This holds that "non-human beings have intrinsic value in the first sense: [...] that non-human beings are not simply of value as a means to human ends" (O'Neill, 1992: 120).

Building on the understanding that human beings are *moral* beings (Wright, 1994), according to Espen Gamlund and Erik Persson, if tan object has intrinsic value, it becomes a *moral* object, whereby human beings must "adopt an attitude of direct moral concern" (Gamlund, 2007: 7). It then possesses a moral status, which causes a responsibility and creates an ethical obligation for special consideration. Gamlund builds on noted philosopher Baruch Spinoza's concept of striving (Latin: *conatus*), by arguing that this special consideration must include a regard for the object's *interests*. This presumes that "something is in an organism's interest even if the organism is not itself conscious of this" (Gamlund 2007: 8). This stems from a utilitarian understanding of pleasure and pain (Wright, 1994), which suggest, for example, that a plant thrives if it receives sunlight, water, etc. and anguishes if it is deprived of them. Hence it can be said to be in the *interest* of the plant to receive these.

These two viewpoints are critical to understand, as they shape how nature's value is perceived: as holding value to human beings, or as holding value for itself. To accept or reject such intrinsic values creates stable, central beliefs that shape a person's understanding of the world, and ultimately, their choices and decisions. As an ideology is understood to be a system of ideals and beliefs (NZG, 2017), how we assign or understand value is foundational for our ideologies, and is thus imbedded within all human action through right and wrong (Næss, 1989). Ideologies are then simply the expressions of differently prioritised and assigned moral objects, for which are understood to have intrinsic value that humans either affirm or deny (Gamlund, 2007: Persson, 2012).

III. Sowing the Seeds of (In)Security

If ideologies stem from how an object is valued (Gamlund, 2007), in a risk society, they also dictate what is in need of protection or preservation. How risk (determined from value and vulnerability) is perceived, frames feelings of (in)security, which directly shape who is to be

secured and from what. According to Jakob Arnoldi, whose novel, *Risk*, provides an invaluable overview of the many dimensions of risk:

Sociologists are generally wary of the idea that risks are calculable and hence objective, but they are interested in *objectifications* of risk - that is, how such calculations are made and what they are used for [...]. Investigating how risk is calculated, objectified and used often exposes how risks have been objectified differently at different times, and how such objectifications serve different interests and are shaped by values. (Arnoldi, 2009: 6; italics in original)

These different ways of 'objectifying' risks are shaped by the values and ideologies of the objectifier, which shape the methods by which we 'control' the future (Garland, 2003), reduce uncertainty, and restore the feelings of security that are heavily desired in a risk society.

Yet what constituted security took new form as the Cold War ended, where traditional views on state security were called into question (Buzan and Hansen, 2009). These views (that to a much lesser extent still exist today) focused on the need of the state to be secured from physical threats, and the military the ones to secure it. As the century came to a close, these views proved inadequate for the emerging diverse and complex insecurities faced around the globe. The discussions and debates that ensued illustrated the need to redefine and broaden the notion of security, to include other objects at risk besides the state (Hudson et. al, 2013). What occurred from this was a wave of 'securitizing,' which is understood as the "process of presenting an issue in security terms" (Buzan and Hansen, 2009: 214). This follows the concept put forth from the Copenhagen School by Ole Wæver and Barry Buzan in that once an issue becomes securitized (through speech/discourse), it is treated with distinction (Wæver, 1995), prioritisation over other issues, and even has the potential to suspend traditional politics in order to be dealt with in urgency (Buzan et al., 1998).

Securitization also does something else remarkable. It "encourage[s] different definitions of referent object (who or what is to be secured)" (McDonald, 2009: 72). This wave of securitizing created a shift in who or what could be secured, which recognised new referent or primary objects beyond the military/state complex. The security debate thus expanded beyond the previously narrow understanding of security, to take on new forms through a 'widening and deepening' process (Nyman, 2013). This process expanded the traditional views of who could be at risk, from what, and by what means. 'Who' was being secured constituted the deepening process, whereby instead of a solely a state or territory, actors at various levels could be secured. This meant that global, international and regional spaces could be secured, as

well as communities and individuals. From 'what' was the widening of security, which was arose out of the need to address complex, dynamic and entirely new threats (Buzan and Hansen, 2009). This inclusion of new threats extended into previously unconsidered realms such as economy, cyber space, non-state actors, and the environment.

For this paper, the important aspect of the widening and deepening process was the formation of human security. Human security was born from the essential need to consider the individual as a subject of security. This deepening away from the state allowed individuals to become the primary referent objects and benefactors of security. It centred "on the individual (rather than the state) and the individual's right to personal safety, basic freedoms, and access to sustainable prosperity" (Liotta and Shearer, 2008: 15). The securitization of the individual (according to securitization theory) also created the foundation of political legitimacy for policy and action to protect this new object at risk (human(s)) (Buzan, 1991). With individuals at the centre, suddenly security also encompassed individual "protection from the threat of disease, hunger, unemployment, crime, social conflict, political repression and environmental hazards" (UNDP 1994: 22). In the wake of climate change, a further redefining of such environmental hazards was made to incorporate threats from the environment such as pollution, resource exhaustion and overall degradation (Liotta and Shearer, 2008).

IV. The Environment: A Risk or At Risk

The encompassing of protection from environmental degradation or hazards is of particular interest. First, it builds on the vulnerability assessment method of attributing risk to the hazard. Second, it follows an anthropocentric system of values, where humans are the referent object of security, primary moral objects of concern, and where human survival is threatened by the environment (Foster, 2013). This means that the effects of climate change and environmental degradation are seen as hazards, and are security threats in themselves.

As human security places the individual in the referent object position, an anthropocentric view of the world is upheld, with human beings at the centre of concern. Here humans are given the only moral status, and they must be protected from the environment, which has only instrumental value as a means for human survival (Persson, 2012). If one subscribes to an anthropocentric ideology like this, which rejects any intrinsic value of nature, it more likely to lead to actions prioritising the human being (and human survival/well-being) above all else. As discussed in Arne Vetlesen's thought-proving book *The Denial of Nature*, this leads to an 'othering' of the natural world, where "[n]ature is admitted no inner life, no distinct being of a qualitative kind, no purposefulness, no goals of its own. As such nature is

eminently open to, vulnerable to, human purposes of all kinds: [...] passively awaiting whatever humans decide to do with it" (Vetlesen, 2015: 58).

The anthropocentric ideology at work here shapes what is perceived as the threat (problem). As it applies to climate change, if an anthropocentric ideology holds, where humans are valued higher than nature, there follows two (not mutually exclusive) responses. The first perspective involves seeing the environment as a threat itself (where humans must be protected), and involves the adaptation to "changes that are under way or expected" (O'Brien, 2012: 673). This includes responding to changes in the environment through (most often) technological measures (Wadhams, 2016), which enable risks to be directly attributed to the hazard (in this case, the environmental change itself). The second response is opportunistic adaptation (Kristoffersen, 2015), where climate change is reframed from threat to opportunity. This includes seeing the potential economic gains and possibilities following from the changing environment (such as the eased access to resources in the Arctic region).

"Climate events and associated suffering can no longer be cast as acts of God or nature. They are now at least partly linked to human agency and responsibility [...] Humans are now demonstrably (to non-deniers) responsible- not only for the vulnerability on the ground, but also for the stressors that arc across the sky" (Ribot, 2014:667-674). If one subscribes to the widely accepted scientific understanding that climate change is anthropogenic (IPCC, 2012), it leads to the conclusion that human security from environmental hazards cannot serve its intended purpose (human protection), if the effects of human activity surpass the ability of the overall biosphere to absorb them (UN, 1987).

This paper accepts that climate change is anthropogenic, which urges the consideration that perhaps anthropocentric ideologies do not properly frame the problem. This may be due to the fact that they do not properly assess risk to climate change, instead deriving causality in the hazard and not the social/political drivers of vulnerability (Ribot, 2014). In this way, retaining the human being as the referent object to be protected from the environment cannot be sustainable, as it does not properly assess "the relationship between human wellbeing and human-caused environmental change" (Greaves, 2016: 660). From a risk standpoint, the understanding that anthropogenic drivers are creating environmental change leads to the conclusion that humans have "compromised the security of the environment" (Dyer, 2001: 446) itself, creating a situation where humans remain vulnerable or even continue activity that may increase their vulnerability (Greenberg, 2017).

To acknowledge this would require the reframing of the referent object away from the human being. If human activity has compromised the integrity of the environment, it follows that the environment has become the primary object of risk, and is thus being threatened by such human activities (Dyer, 2001). This change in risk perception challenges the anthropocentric ideology that humans are the central referent object, and encourages a wider ecocentric view referred to as nature-centred or ecocentric security (Foster, 2013). In reframing the referent object to the environment, one "devalues the importance of individuals, states and state boundaries as the [risk] perspective moves from the human and the state as the referent point of security to consider non-human (as well as human) life and the biosphere to be within the security remit" (Dyer 2001, 442). In essence, the environment is no longer seen as *a risk*, but is *at risk*. This change is risk perception is pivotal, as it redefines the problem of climate change as the hazard causing threat to humans- to humans as the hazard, compromising the security of the environment and threatening the entire system of which we are a part.

V. Towards an Ecocentric Security

If the anthropocentric ideologies are challenged in such a risk perception, perhaps an ecocentric ideology need be adopted. In doing so, moral status is ascribed to all living and non-living things as pieces of the greater ecosystems (Persson, 2012). If one subscribes instead to an ecocentric view, entire systems and communities have intrinsic value with their own interests that require special consideration. Such consideration would reject opportunistic adaptation, as this leads to a 'double exposure.' Here the causes of climate change are exacerbated through positive feedback (Leichencho and O'Brien, 2008), which continue to put the larger systems of the planet in jeopardy. This means that by capitalising on the effects of climate change, further climate change effects are created. Opportunistic adaptation thus fails to acknowledge the intrinsic value and interests of ecosystems and larger systems which exhibit that all "life on Earth in some way belongs together and is interdependent" (Perrson, 2012: 981).

Anthropocentric ideology can still be found in the notion that human activity is "putting into jeopardy not just the survival of nonhuman life-forms but the survival of humanity as well, since the latter depends on the former" (Vetlesen, 2015: 42) as part of the larger system of the planet. From this perspective, it could be argued that adopting an ecocentric security could still be done through an anthropocentric ideology, whereby humans are still (at the end of the day) the ones to be secured. This notion however corrupts the reconciliation of current anthropocentric ideologies which find only instrumental value in nature, and often lead to actions such as opportunistic adaptation which furthering the effects of climate change (Kristoffersen, 2015). Retaining humans as the referent object keeps from following alternative adaptation strategies, such as discovering "how to deliberately transform systems and society

in order to avoid the long-term negative consequences of environmental change" (O'Brien, 2012: 673).

Hence the true power in reframing the environment as the object at risk lies in the types of adaptations that would follow from such a shift in values. This would encourage adaptation through transformation (Næss, 1989), which is understood here as a quantitative or qualitative adjustment in form, structure, or meaning (O'Brien, 2012). This type of adaptation sees climate change not as an opportunity to continue or accelerate human activities that have created the problem (which finds vulnerability primarily in the hazard and demands an adjustment to it), but rather as an opportunity to create innovative or new solutions via the deliberate restructuring of social systems (which created the underlying vulnerabilities to the hazard in the first place). This includes the necessary and timely opportunity to transform systems such as governance, education, and economy (Næss, 1989; Evernden, 1992; Brennan, 2000).

While the specific ecocentric-based ideologies that have been developed thus far, such as Aldo Leopold's 'land ethic' (see Leopold, 1949) and Arne Næss' (biocentric) 'deep ecology' (see Næss 1989) have tremendous practical limitations (Anker and Witoszek 1998; Persson 2012), this paper asserts that their power lies in their reshaping of risk perception by rejecting the anthropocentric moral object and values, which have in turn led to climate change. Instead they call for a redefining of these values which reshape the problem itself. This in turn creates new solutions which call for a "[s]ignificant change of life conditions [...]. These affect basic economic, technological, and ideological structures" (Næss, 1989: 29).

Thus, understanding the environment as the object at risk, and as the referent object to be secured, dictates that the problems of climate change are found in human activity. The solutions that follow must then protect nature and the ecosystem from negative human activities, which would not allow the continued use of nature as a commodity for its instrumental value. This encourages truly transformative adaptation strategies derived from the intrinsic valuing found in ecocentric ideologies. In this sense, "security should be sought for all life, both human and non-human" (Foster, 2013: 48). To follow the environment as the object at risk means a more holistic view of environmental security need be adopted, and rather than having humans as objects to be secured, all nature is.

VI. Conclusion

Climate change is no longer at the horizon, but on humanity's doorstep. In a 'risk society,' how vulnerability and value shape risk is an essential consideration to be made. This paper did so by looking at vulnerability and discussing the difficulty in assessing underlying drivers. Value

was also examined thoroughly, with particular emphasis on how value is generated, and how this shapes ideologies. Understandings of nature's value as instrumental or intrinsic then causes differences in human responsibility. Differently prioritised or assigned moral statuses manifest themselves then in underlying ideologies which engage anthropocentric and ecocentric views of the world. These views then become the foundation for how the world is perceived and provided a lens for assessing risk perception.

This paper found that how risk is perceived frames (in)security, which shapes who is to be secured and from what through securitization. In the wake of the current ecological crisis, two contrasting risk perceptions were discussed: the environment as a risk or at risk. Here the environment is either understood through an anthropocentric lens as a threat to humans, or through an ecocentric lens as threatened by humans. This distinction frames how the cause of risk, or the problem around climate change, is understood. In acknowledging the anthropogenesis of climate change, the paradox that human have compromised the environment was highlighted.

Fundamentally, this paper put forth that the values which inform ideologies shape the way the environment is seen as a risk object (either to secure or to be secured from), which in turn frame perceptions of climate change: both problems and solutions. This paper concluded by asserting that the current anthropocentric perception of the environment is not addressing the underlying vulnerabilities to and causes of climate change. This paper put forth that to subscribe to the understanding of the environment at risk, urges the consideration of alternate ideologies which encourage transformations for a more sustainable form of security.

These views are reiterated by the 'risk society' founder himself. In his criticism of climate politics, sociologist Ulrich Beck noted that climate politics should not be about the *climate*, but rather about "transforming the basic concepts and institutions of first, industrial, nation-state[s]" (Beck, 2010: 256). This supports that not only are the solutions to the climate crisis contingent on the values that construct the ideologies through which we perceive the world, but also on how the crisis *itself* is understood. The understanding of the problem subsequently forms the scope for which possible solutions are sought.

This paper demonstrated how nature is valued shapes the risk perception on the effects of climate change, and urges that values be more closely assessed and ideologies not be taken for granted as simply *being*. If humans adjust to an ecocentric understanding of security, and thus remould how the environment is understood as the object to be protected, there is renewed possibility for changing values and understandings of the world. These in turn have the opportunity to transform the biosphere by how we respond to and perceive climate change.

VII. References

Adger, N. (2006). "Vulnerability." Global Environmental Change 16(3): 268-281.

Anker, P. and Witoszek, N. (1998). "The Dream of Biocentric Community and the Structure of Utopias" *Worldviews* 2: 235-256.

Arnoldi, J. (2009). "Risk." Polity Press.

- Beck, U. (2007). "World at Risk." Cambridge, UK: Polity Press. pp. 24-46.
- Beck, U. (2010). "Climate for Change, or How to Create a Green Modernity?" *Theory, Culture & Society* 27(2-3): 254-266.
- Brennan, T. (2000). "Exhausting Modernity: Grounds for a New Economy." *Routledge*. pp. 75-134.
- Buzan, B. (1991). "People, States and Fear: An Agenda for International Security Studies in the Post-Cold War Era." *London: Harvester Wheatsheaf*.
- Buzan, B. and Hansen, L. (2009). "The Evolution of International Security Studies." *Cambridge University Press.* pp. 187-225.
- Buzan, B. et. al (1998). "Security: A New Framework for Analysis." London, UK: Lynne *Rienner*.
- Callicott, J. (1986). "On the Intrinsic Value of Nonhuman Species." In Norton, B. (Ed.) "The Preservation of Species." *Princeton University Press*.
- Cardona, O., et al. (2012). "Determinants of Risk: Exposure and Vulnerability." In Field, C.B. et. al (Eds.) "Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation." A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change (IPCC). *Cambridge University Press, Cambridge, UK.* pp. 65-108.
- Dyer, H. (2001). "Environmental Security and International Relations: The Case for Enclosure." *Review on International Studies* 27: 441-450.
- Evernden, N. (1992). "The Social Creation of Nature." Johns Hopkins University Press.
- Foster, E. (2013). "Green Security." In Shepherd, L. (Ed.) "Critical Approaches to Security: An Introduction to Theories and Methods." *Routledge*. pp. 37-50.
- Gamlund, E. (2007). "Who Has Moral Status in the Environment? A Spinozistic Answer." *The Trumpeter* 23 (1): 3-27.
- Garland, D. (2003). "The Rise of Risk." In Ericson, R. and Doyle, A. (Eds.) "Risk and Morality." *University of Toronto Press*. pp. 48-83.
- Greaves, W. (2016). "Securing Sustainably: The Case for Critical Environmental Security in the Arctic." *Polar Record* 52(267): 600-671.

- Greenberg, M. (2017). "Explaining Risk Analysis: Protecting Health and the Environment." *Routledge*.
- Hudson, N. et. al (2013). "Human Security." In Shepherd, L. (Ed.) "Critical Approaches to Security: An Introduction to Theories and Methods." *Routledge*. pp. 24-36.
- IPCC. (2012). "Summary for Policymakers." In Field, C.B. et. al (Eds.) "Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation." A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change (IPCC). *Cambridge University Press, Cambridge, UK*. pp. 3-21.
- Kristoffersen, B. (2015). "Opportunistic Adaptation." In O'Brien, K. and Selboe, E. (Eds.) "The Adaptive Challenge of Climate Change." *Cambridge University Press*. pp. 140-159.
- Leichencho, R. and O'Brien, K. (2008). "Double Exposure: Global Environmental Change in an Era of Globalization." *Oxford University Press*.
- Leopold, A. (1949). "A Sand County Almanac." Oxford University Press. Liotta, P. and
- Maslin, M. (2014). "Climate Change: A Very Short Introduction." Oxford University Press.
- McDonald, M. (2009). "Constructivisms" In Williams, D. (Ed.) "Security Studies: An Introduction." *Routledge*. pp. 63-76.
- NZG (2017). "Personal Beliefs, Values, Attitudes and Behaviour." Web. Accessed on 22 February, 2018 from http://www.iaa.govt.nz/ethics-toolkit/personal.asp
- Nyman, J. (2013). "Securitization Theory." In Shepherd, L. (Ed.) "Critical Approaches to Security: An Introduction to Theories and Methods." *Routledge*. pp. 53-62.
- Næss, A. (1989). "Ecology, Community and Lifestyle." Cambridge University Press.
- O'Brien, K. (2012). Global Environmental Change II: From Adaptation to Deliberate Transformation." *Progress in Human Geography*. 36: 667-676.
- O'Neill, J. (1992). "The Intrinsic Value of Nature." The Monist 75(2): 119-137.
- Persson, E. (2012). "The Moral Status of Extraterrestrial Life" Astrobiology 12(10): 974-986.
- Ribot, J. (2014). "Cause and Response: Vulnerability and Climate in the Anthropocene." *The Journal of Peasant Studies*. 41(5): 667-705.
- Rolston, H. (1994). "Value in Nature and the Nature of Value." In Attfield, R. and Belsey, A. (Eds.) "Philosophy and the Natural Environment." *Cambridge University Press*. pp. 13-30.
- Shearer, A. (2008). "Zombie Concepts and Boomerang Effects: Uncertainty, Risk, and Security Intersection through the Lens of Environmental Change." In Liotta, P., et. al (Eds.). "Environmental Change and Human Security: Recognizing an Acting on Hazard Impacts." Proceedings of the NATO Advanced Research Workshop.

Springer. pp. 9-34.

- UN (1987). "Our Common Future." Report of the World Commission on Environment and Development.
- UNDP (1994). "Human Development Report: Annual Report." Oxford University Press, New York. pp. 22–25.
- Vetlesen, A. (2015). "The Denial of Nature: Environmental Philosophy in the Era of Global Capitalism." *Routledge*. pp. 1-95.
- Wadhams, P. (2016). "A Farewell to Ice: A Report from the Arctic." *Allen Lane: Penguin Publishers*. pp.171-206.
- Wotony, Helga (2016). "The Cunning of Uncertainty." Polity Press. pp.vi-36.
- Wright, R. (1994). "The Moral Animal: Why We Are the Way We Are." *Random House Inc.* pp. 327-334.
- Wæver, O. (1995). "Securitization and Desecuritization." In Ronnie, D. (Ed.) "On Security." New York Columbia Press.