

UNDERGRADUATE THESIS PROPOSAL

TO [THESIS MENTORS]: [Names of Mentors Here]

FROM:[Your Name Here]

DATE: [Submission Date]

SUBJECT: Proposal to complete an undergraduate capstone/thesis project on the role of art in addressing the current environmental crisis.

STATEMENT OF THESIS & PROJECT SUMMARY

Anthropocentric environmental problems today are complex, intertwined, and exist everywhere, affecting everyone, demanding multi-disciplinary collaboration and nonstandard solutions. Many pressing environmental issues have been made trivial by politics, cultural practices, and a lack of care, concern, or emotional arousal by people towards the prevalent ecological degradation going on around us. Scientific understanding of many environmental problems are substantial and are not the barrier to addressing these issues and implementing solutions. Rather, humans are disconnected from nature looking at the natural world as a separate entity from society. When approaching problems calculations, facts, economics, and reductionist assumptions replace our direct experience of the world, the intrinsic value of nature, and our connection and necessary reliance on it. Our interdependence on the natural world is taken for granted. An effective multidisciplinary approach to the complicated environmental problems must necessarily include art as a tool. Innovative concepts and ideas in art have long been utilized, intentionally and unintentionally, as a platform for social change and philosophical shifts. Art's unparalleled capacity to engage with the emotions can be used as a strategy to generate empathy and appreciation for the natural world for the greater purpose of addressing the environmental crisis.

This project will explore the vital role of art and analyze ways in which it has been used as a medium for promoting environmental behavior and stewardship, conversation, political action, and implementation of ecological solutions. The various functions and degrees of effectiveness in previous environmental artists and artworks will be examined. Discourse on the capabilities of art and potential problems in communication through artistic mediums will be presented. How art pieces can avoid emotional manipulation, what makes a piece politically progressive and what quantifiable effects are shown from environmental artworks will be looked at. Further ways in which environmental art could broaden its scope, audience, and influence will also be discussed.

METHODOLOGY

When analyzing an art piece formal elements and material properties will be weighed. Content, the thought and meaning being expressed in a piece, will be studied. As well as context, the place a piece has in contemporary art tradition and the background of an artist and an art piece. This paper will focus on a few select artists and artworks in order to include as many relevant details necessary for an effective analysis. These details will be used to identify meanings and explain the mode of their embodiment. The most reasoned, detailed, and plausible theorization of a piece along with any notable, quantifiable effects of these works will be aimed for.

REVIEW OF LITERATURE

Art Literature Review

Artists have been inspired by the natural world for centuries (Young, 2015, Adams, 2014, Browne, 2014, Milani, 2009). Artists have long been displaying the mutual dependence that humans have with the environment around them through landscapes and still lives (Karen, 2011,

Browne, 2014). Contemporary art is taking on new realms of expression motivated by the natural world. A notable movement was that of Land art and earthworks beginning to emerge in the 1960's. Beforehand, nature was a subject of artwork, but, within this emerging field the artwork becomes visible in nature, part of the landscape, and observable from pictures or videos because of its temporary and ephemeral nature (Avşar, 2014, McEvelley, 2014, Coggins, 2009, Grande, N.D., Browne, 2014).

This trend is continuing with many contemporary artists directly transforming and engaging with the natural world to create art (Kastner 2015, Browne, 2014). Modern artists such as, Andy Goldsworthy, practice this form of art. Goldsworthy is a popular example, he is a subject of fourteen books with titles such as, *Andy Goldsworthy: A Collaboration with Nature* and *Hand to Earth: Andy Goldsworthy Sculpture*, and films such as, *Rivers and Tides*, by Thomas Riedelsheimer, a German documentary film artist (Fulford, 2007). As an artist, he does not represent, describe, or celebrate nature, like many of the thousands of artists engaged in natural subjects before him. Instead, he collaborates with it. His pieces are usually delicate and always temporary. He makes changes in the landscapes, but in subtle and unobtrusive ways, letting nature lead him, and interacting with it in animated dialogue and relationship (Fulford, 2007, Kastner, 2015).

Another contemporary form of artistic expression related to the environment involves incorporation of sustainable practices or materials, or using natural or upcycled mediums to create works of art. Often, these pieces will work to visually confront modern environmental issues regarding consumption, plastic pollution, biodiversity loss, or climate change (Richardson et. al., 2013, Brown, 2014). Other artists use various artistic mediums to respond to, visualize, or communicate environmental issues. Artists are trying to change the conversation about

environmental issues, show what we will lose if we do not prioritize our environment, help people see and feel problems, bring tangible awareness to our effect on the global planet, and create connection and community (Richardson et. al., 2013).

To further these efforts, artists and scientists are working together to visualize scientific concepts and inspiration (Opermanis et. al., 2015, David et. al., 2012, Beans, 2018). These collaborations are ideal for engaging with the public on environmental issues. Art and science are sometimes seen as opposite or dissonant disciplines, but the two sides do not always stand apart. Art and science both arose from humans evolved desire to describe their experience of reality. Generally, science describes the external reality and common consensus, while art accounts internal reality and subjective experience (Dunn, 2014). Modern collaborations between these disciplines demonstrate how they can merge congruently. Art is not just a tool for scientists to use, but a partner discipline (A'Bear, 2017, Beans 2018, Ainsworth 2011, Dambekalns, 2012). For example, artists have been combining science and aesthetics to respond to the vulnerability of coral reefs due to local and global environmental impacts from humans. One artist created art that was not only aesthetically pleasing but also ecologically functional. Titled *Zoe-A Living Sea Sculpture*, this artwork is a helical structure that is both underwater art and a coral restoration experiment. Low-voltage electricity is run through the metalwork using a newly developed technology, Biorock, which creates zones of higher pH that attracts minerals to accrete on the structure. Coral larvae and other organisms colonize the art piece. This piece is not only art celebrating or displaying ecology but art *as* ecology. Another artist created complex crochet coral reefs created in a mathematically similar way that coral reefs are formed. This artist has displayed pieces like this all around the world and worked with local communities to promote environmental solutions. Another artist used clay to create coral reefs that are like coral itself,

fragile, diverse, and made from calcium carbonate. This piece was put on display in the lobby of the Department of Commerce in Washington, D.C. to encourage policymakers to prioritize ocean conservation (Beans, 2018).

Art is a powerful discipline to engage the public and non-scientist people about environmental problems as it can engage with the senses, emotion, empathy, and intuition. Art is valuable for scientific communication in many ways, such as synthesizing complex scientific information, promoting new ways of looking at issues, touching people's emotions, and creating a celebratory atmosphere (David et. al., 2012). A fact-based and fear-based approach is commonly used in environmental campaigns and organizations. Rather than focusing on the natural world or education about it they focus on its demise. Research has shown that this does not work. One study set out to determine whether threatening or connecting messages would generate more support for environmental causes. They employed the self-determination theory which argues that individuals are more likely to have increased openness to experience and reduced defensiveness when their relatedness need is met. In this circumstance, connecting people to the natural world and others could meet this need and produce this openness. Threatening messages often would lower openness to new information and were characterized by avoidance aimed at reducing tension. Connecting not threatening messages made individuals feel a higher sense of general caring and concern, and more state openness versus defense, combined these reactions promoted environmentally responsible action within the individual (Weinstein et. al., 2015).

A study done in Latvia showed the immense positive effects that using art to communicate science in a public sphere can have. Latvia was facing issues with expanding nature reserves due to contrary opinions by its citizens. An event was organized that focused on

art, music, and hands on scientific discovery and involvement. The findings after doing this event for a number of years showed that over half of the people would not have attended the event if it did not have the art aspect and that 83 percent either had a more positive environmental outlook or changed behavior to be more environmentally conscious. This event helped Latvia to communicate issues and help the citizens understand the value of expanding nature reserves. Overall, this showed that art can have a powerful impact for expanding the reach of scientific information and audience and for connecting to people's emotions which is important for habit changing (Opermanis et. al., 2015).

Findings show that scientists can see the value of using art as a tool for communication and connection to the general public. Research was conducted at a scientific conference that included artistic installations, paintings, and performances. Through a survey, it was found that 86% of ecologists and research students responded favorably to the use of arts in a scientific forum, over half saw potential in using art to communicate science but only 26% of them said they would consider using it (David et. al., 2012). This is an important area that needs further study, perhaps scientists do not know how to implement art, do not have connections to the art world and artists, or cannot see an artistic vision for their specific work.

Environmental Crisis/Disconnect from Nature Literature Review

Humans have long been inhabiting the Earth occupying many different relationships with its processes, biotic and abiotic parts. Today, an anthropocentric view of the world is standard, seeing the environment as balanced in opposition to society (Barry, 2009, Bekoff & Bexell, 2010, Sessions, 1991). This frame of mind is problematic as it separates humans from the natural world allowing them to ignore the connection and role we have within ecosystems, exploit nature with indifference, and disregard the value and worth of non-human life. This stems from the

influential philosophical position of, “cartesian dualism” which makes humans subjects of the world while subjecting everything else to the status of an object (Demos, 2018). This attitude cannot be attributed to a single, direct cause, but as ecologists and social scientists have been documenting for decades, people, especially children, have less contact with nature creating an ongoing alienation (Soga & Gastone, 2016, Sessions, 1991, Pointon, 2014).

From an evolutionary perspective, humans have a deep emotional need to associate with nature, it is in our biology (Wilson, 1993). Contemporarily, however, society has become so distant from its natural origins it fails to recognize the basic dependence that our species, and all other living things, have upon nature (Kellert, 2002). Once we were alert to nature and other species whom we shared Earth with. As a species we intuitively understood the coexistence of Earth’s parts and “sustainability” long before science told us this. Now, we have forgotten about our dependence on the natural world for food, fuel, clean air and water, shelter and resources (Bekoff & Bekoll, 2010). To many, it is as if water comes from a faucet, heat from a furnace. “The Global Footprint Network reports that the world’s 6.7 billion humans are now consuming all resources 30 percent faster than the sustainable rate of replenishment. In the United States, people are now consuming resources nearly 90 percent faster than the Earth can replenish them” (Bekoff and Bexell, 2010, 70). People have forgotten about their place within nature and the delicate balance of complex natural systems (Bekoff & Bekell, 2010, Beery & Elmberg, 2015).

Leopold analyzed the disconnection between humans and nonhuman nature long before the modern environmental movement (Beery et. al, 2015). In his Land Ethic he establishes humans insignificant biological place, the necessity of coexistence in ecosystems, and an ethic for the land as a whole, “a thing is right when it tends to preserve the stability, integrity, and

beauty of a biotic community” (Leopold, 1968). In modern times this loss of a relationship with nature has been called “Nature Deficit Disorder” (Louv) or the “extinction of experience” (Beery et. al, 2015). It is described as, “...a decline in specific qualities of attention, ways of learning and thinking about about the natural world” (Louv, 81).

This disconnect could be due to fact that the majority of the world’s population today lives and works in an urban setting, “Globally, the world’s urban population in developed regions has increased from 55% in 1950 to 78% in 2011 and is expected to increase by 86% by 2050” (Beery& Elmberg, 2015, p. 8839). This is not limited just to a loss of experience with pristine wilderness but includes a loss of time spent in and observing urban greenspaces and wildlife (Takano et. al., 2002, Truner et. al., 2004). Consequences of the urban disconnect and access to nature has been researched extensively. Consequences include degradation of public health and wellbeing, loss of emotional affinity to nature, decline in pro-environmental attitudes and behavior, and are loss motivated to want to visit or protect it (Keniger et. al, 2013, Wells & Lekies, 2016, Shanahan et. al., 2015, Thompson et. al, 2007). Many studies have shown a positive relationship with exposure to nature and physical and psychological health (Shanahan et. al., 2015, Keniger et. al., 2013, Hartig et. al., 2014). Regular exposure to natural environments is necessary for basic health and wellbeing and in some instances is shown to be equally as effective as conventional forms of medical treatment (Groenewegen et. al., 2006).

An even greater consequence from nature-deficit disorder or the extinction of experience is that it has become a fundamental obstacle in stopping and reversing global environmental degradation (Miller, 2005, Balmford and Cowling, 2006). Evidence shows that this disconnect changes people’s attitudes towards nature, the values they place on it, beliefs concerning the environment, environmental ethical norms, and their willingness to protect nature (Soga &

Gaston, 2016). It is rarely a lack of knowledge or data that prevents action on environmental issues, instead it is due to problems with human psychology or social and cultural factors (Bekoff & Kexell, 2010). As Leopold points out, “we can be ethical only in relation to something we can see, feel, understand, love, or otherwise have faith in” (Leopold, 1968, p.214). An interesting paradox that arises from this direct disconnect is that many people have a critical knowledge about environmental issues and problems in other parts of the world, such as coral bleaching or deforestation of rainforests, but lack any detailed awareness of the nonhuman nature around them in their daily lives (Beery et. al., 2015). People lack “place identity” and “place attachment” to natural areas which is positively linked to environmentally responsible behavior (Davis et. al., 2009).

An understanding of our place within the world has disappeared while we are absorbed into screens and placidity. The recent evolutionary timeline of humans has been marked by unprecedented scientific and technological advancements in a relatively short period of time. This trend has been unmatched by advancements in ethics, awareness, and consciousness. The way that land, other living species, and even other human beings are treated demonstrates the physical and ethical distance people have with reality, the immediate environment around us, and the dependence we have upon it. Anthropogenic environmental degradation is easily witnessed in almost any corner of the world. Global climate change, mass species extinction, ocean acidification, sea level rise, rapid deforestation, plastic pollution, water scarcity, desertification, depleted soils, polluted air, overpopulation, resource extraction and depletion, fracking, urban heat islands, genetically modified crops, light pollution, groundwater pollution, overfishing, toxic chemicals, massive landfills, biodiversity and habitat loss, introduced invasive species, and an assembly of other embedded and compounding environmental problems caused by humans

are being faced today. These problems do not just affect the environment and other species but threaten the human project as well.

When addressing these environmental problems (and many other social and political problems for that matter) calculations, 'facts', and measurements are predominantly considered. We approach the environment as a set of separate objects and neglect the relationship of ourselves to it. The systems that we use to make environmental decisions are too reductionist focusing on quantifiable scientific knowledge or economics and are not able to account for our direct experience of it, intrinsic value, or the connection and reliance that we have upon it. Society and individuals are already always in a relation with their environment. This idea reveals that, "the values we associate with natural environments emerge from the intertwining of subject and object in the experience of nature; thus, they should be framed in terms of the relations that are created in these experiences, rather than in terms of measurable qualities of separated objects" (Johannesdottir, 2016, p. 189). The inadequacy of scientific understanding and quantifiable knowledge is demonstrated in the case of climate change. Despite decades of solid scientific evidence that anthropogenic climate change exists and will affect the conditions of all life on earth, inconsiderable action has been taken to address it (Naustdalslid, 2011). Though there is evidence that scientific knowledge can be used and turned into action, it is often in the case of man managing and controlling nature more efficiently (Naustdalslid, 2011). The knowledge of the seriousness of climate change and its causes and effects have not led to any significant collective action.

In the case of climate change, there are many compounding factors to consider when understanding the inaction that surrounds the issue. However, many studies show that values, not knowledge, are often the main driving factor in action. A study done on the motivational factors

for “Eco-driving” demonstrated this. Eco-driving, whether that is driving less, taking public transportation, or using alternative energies, is an effective strategy to save fuel and reduce CO₂ emissions. The study done tested whether values or environmental knowledge contributed more to pro-environmental behaviors by comparing the value-based norm theory with knowledge belief norm theory to see which one would enhance problem awareness and outcome efficacy. (Unal, et.al., 2007). This study considered three different types of values: biospheric, altruistic, and egoistic values. These are standardized defined values that have been used in a variety of other studies. Biospheric values are a key concern for the environment, altruistic values are a key concern for the welfare of others, and egoistic values are a key concern for maximizing individual benefits (Unal, et.al., 2007, p. 1096). In addition, three knowledge types were considered: general knowledge of climate change causes, general knowledge of consequences, and specific knowledge of CO₂ emissions and particulate matter resulting from car use (Unal, et.al., 2007, p. 1098). Findings showed the strongest positive correlation between biospheric values and pro-environmental behavior because they put emphasis on collective benefits, including nature, the environment, and other people. A similar but weaker pattern was found for altruistic values. Egoistic values did not correlate significantly with any dependent variables (Unal, et.al., 2007, p. 1103). Knowledge of general causes and consequences of global warming positively correlated with environmental behavior, while specific knowledge of CO₂ and particulate matter was insignificant (Unal et.al., 2007, p. 1103). Overall, the findings revealed that values were a stronger trigger of norm activation for personal behavior and intention to eco-drive than knowledge did, most especially biospheric values. In contrast, environmental knowledge types were not as significantly related to personal awareness and efficacy. These findings are consistent with other research that has tested the value-based norm theory in the

domain of pro-environmental behaviors, finding that values affect environmental behavior the most (Unal et. al., 2007, p. 1108). Other similar research suggest that environmental knowledge motivates people to act environmentally minded if they strongly endorse biospheric values (Udan, et.al., 2007, p. 1109) indicating that knowledge itself is not necessarily sufficient to motivate people to act pro-environmentally.

The findings demonstrated in this study and others like it show that it requires more than the reductionist scientific knowledge to address environmental degradation and change in our society. Climate change is one of the largest and most pressing modern environmental problems, the result of man's impact on nature that has changed basic properties of nature itself (Naustdalslid, 2011, p. 246). This disrupts the common notion that the natural world is detached from societal interests. Climate change is an expression of the 'risk society', coined by Ulrich Beck, which is explained by 'reflexive modernity' whereby modern society's capacity to intervene in its own environment has set off processes in society and the environment that 'reflect' back on it and call into question its own functional logic (Beck, 1994). Humans have disregarded the fact that their activities have an effect on the world at large perhaps because they have forgotten their place within it and it is cycling back and affecting them. The prevalent 'objectivist' and reductionist worldview are inadequate to encompass our earthly experience. In order to address the massive, global environmental problems cultural practice, values, and emotions needs to be considered and applied. A place needs to be created in society for emotions and connections to be valued and for the environment and our place within it to be reassessed and realized. Collective mobilization using art and metaphors centered around biocentric values within popular culture needs to be harnessed in order to draw people's attention, care, and concern to environmental problems in a way that it can take on its own momentum.

Research in the past decades have shown that emotional affinity for nature is the strongest explanation for nature-protective behavior (Kals et. al., 1999, Davis et. al., 2009). It is argued that if there is going to be broad public support to overcome global anthropogenic environmental pressures then there must be opportunities for people to build emotional ties to nature (Miller, 2005, Balmford and Cowling, 2006). The ecological crisis is so broad and exceedingly complex that it demands inter-disciplinary perspectives. Art, with its long history of experimentation, imaginative invention, and radical thinking has a powerful and transformative role to play (Demos, 2018). Art has important value in its capacity for creating perceptual and philosophical shifts and offering new ways of comprehension about ourselves and our relationship to the natural world (Demos, 2018). Art can construct different forms of living or at least open up the possibility for us to, “glimpse the beauty of living otherwise (Demos, 2018, pg. 399). Art could demonstrate the potential coexistence that could be had with the natural world versus prevalent destructive traditions.

There is a perilous need for a connection to nature and shift in human’s relationship with the natural world. “It appears the Age of Ecologies stands today at major crossroads. One path follows the crucial philosophical and ecological insights of Thoreau and Muir and Naess, while incorporating, to the extent possible in this radically out-of-balance world, the concerns of social justice. It involved what Gary Snyder calls “The Practice of the Wild” (Snyder 1990). It means recapturing for humanity what philosopher Max Oelschlaeger refers to as “Paleolithic consciousness” (Oelschlaeger 1991). All of the ecological evidence and wisdom suggests that the other path (a continuation of the “anthropocentric detour” will lead inexorably, perhaps with the best of intentions), will lead to an accelerating decline of the earth and all its inhabitants” (Sessions, 1991, pg.7). Art has a powerful role to play in the adoption of new philosophies,

meaningful experiences with the natural world, and a renewed realization of our place within a larger ecological system.

PRELIMINARY OUTLINE

- **INTRODUCTION**
 - Include a small portion/summary about **conceptual art**/history/overview
 - Literature Review
 - Introduction of thesis and overview of paper
- **ROLE OF ART IN ALL THIS/EXAMPLES**
 - Briefing about art theory
 - Expression and Cognitive theories of art
 - Traits of art/power of art (lots of good notes to go off of from “But, is it art?” book)
 - Focus on individual art pieces rather than art movements (Narrow it down to a select few and go in depth)
 - For sure include: Ruri’s “That day...”
 - Icelandic Nature and Phenomenology journal article about the value of stories and connections like this.
 - Do more in-depth research of background, artist, etc.
- **QUANTIFICATION/ADDRESS POTENTIAL CHALLENGES/PROBLEMS**
 - Extent of capabilities of art
 - Timing in urgent environmental problems
 - Address potential miscommunications that could arise through artistic mediums/modes of communication
 - How to avoid “emotional manipulation” (Like in many environmental campaigns)
 - What makes a piece politically progressive? What quantifiable effects might there be?
 - How to impact people? How to reach the most people?
- **APPLICATION/CONCLUSION**
 - Call to action
 - What’s next?
 - What could be better?
 - What should happen?
 - What have I learned?
 - What can I do?
 - What was the point of this all?

SCHEDULE FOR COMPLETION

October 29: Proposal Draft and Outline

November 12: Updated/Revised Thesis Proposal

November 26: Draft of Introductory Chapter

December 7: Completed Proposal, Revised Introductory Chapter, Advisory Approval Sheet

December 15: Chapter 1, Introduction, Presentation of Thesis, Literature Review finished

January 15: Chapter 2 draft

February 1: Chapter 2 revisions and Chapter 3 draft

March 1: Chapter 3 revisions and Chapter 5 draft/conclusion

March 15: Revisions and final draft

End of April: Thesis Defense

May 1: Thesis completion

PRELIMINARY WORKS CITED/BIBLIOGRAPHY

Ainsworth, K. (2011). Public Art & Event Design: A Synthesis of Sustainability, Environmental

Awareness, Beauty & Functionality. *Design Principles and Practices: An International Journal*,5(1). doi:10.1107/s0108768107031758/bs5044sup1.cif

Avşar, P. (2014). A Section from the 1960s to the Modern Day: The Place of Nature in the

Concept of Land Art. *International Journal of Science Culture and Sport*,1(1), 5-5.
doi:10.14486/ijscs52

Balmford A, and Cowling RM. (2006). Fusion or failure? The future of conservation biology.

Conservation Biology 20, 692-695.

Bannon, E. B. (2016). Nature, Meaning and Value. In *Nature and Experience: Phenomenology*

and the Environment (pp. 53-68). London: Rowman and Littlefield International.

- Barry, C. (2009). The Environment/Society Disconnect: An Overview of a Concept Tetrad of Environment. *The Journal of Environmental Education*, 41(2), 116-132.
doi:10.1080/00958960903295241
- Beans, C. (2018). Science and Culture: Artistic endeavors strive to save coral reefs. *Proceedings of the National Academy of Sciences*, 115(21), 5303-5305. doi:10.1073/pnas.1807178115
- Beck, U. (1994). The reinvention of politics: Towards a theory of reflexive modernisation. In *Reflexive modernization: Politics, tradition and aesthetics in the modern social order* (pp. 1-55). Oxford, UK: Polity Press.
- Beery, T., Jönsson, K., & Elmberg, J. (2015). From Environmental Connectedness to Sustainable Futures: Topophilia and Human Affiliation with Nature. *Sustainability*, 7(7), 8837-8854.
doi:10.3390/su7078837
- Bekoff, M., & Bexell, S. (2010). Ignoring Nature: Why we do it, the dire consequences, and the need for a paradigm shift to save animals, habits, and ourselves. *Human Ecology Forum*, 17(1), 70-82. Retrieved September 21, 2018.
- Brown, A. (2014). *Art & ecology now*. NY, NY: Thames & Hudson.
- Cooper, D. (2016). Music and the Presence of Nature. In *Nature and Experience: Phenomenology and the Environment* (pp. 175-186). London: Rowman and Littlefield International.
- Davis, J. L., Green, J. D., & Reed, A. (2009). Interdependence with the environment: Commitment, interconnectedness, and environmental behavior. *Journal of Environmental Psychology*, 29(2), 173-180. doi:10.1016/j.jenvp.2008.11.001

- David J., C., Nick, R., & Guy, B. (2012). Communicating Ecology Through Art: What Scientists Think. *Ecology and Society*, Vol 17, Iss 2, P 3 (2012), (2), 3. doi:10.5751/ES-04670-170203
- Donohoe, J. (2016). Towards a Phenomenology of Nature. In *Nature and Experience: Phenomenology and the Environment* (pp. 17-30). London: Rowman and Littlefield International.
- Freeland, C. A. (2002). *But is it art?: An introduction to art theory*. New York, NY: Oxford University Press.
- Fulford, R. (2007). Andy Goldsworthy: nature's collaborator, art's alchemist. *Queen's Quarterly*, (4), 596. Retrieved from <http://ezproxy.uvu.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=edsglr&AN=edsgcl.176205244&site=eds-live>
- Grimm, N. B., Faeth, S. H., Golubiewski, N. E., Redman, C. L., Wu, J., Bai, X., & Briggs, J. M. (2008). Global Change and the Ecology of Cities. *Science*, 319(5864), 756-760. doi:10.1126/science.1150195
- Groenewegen, P. P., Berg, A. E., Vries, S. D., & Verheij, R. A. (2006). Vitamin G: Effects of green space on health, well-being, and social safety. *BMC Public Health*, 6(1). doi:10.1186/1471-2458-6-149
- Hartig, T., Mitchell, R., Vries, S. D., & Frumkin, H. (2014). Nature and Health. *Annual Review of Public Health*, 35(1), 207-228. doi:10.1146/annurev-publhealth-032013-182443
- Johannesdottir, R. G. (2016). Phenomenological Aesthetics of Landscape and Beauty. In *Nature and Experience: Phenomenology and the Environment* (pp. 187-200). London: Rowman and Littlefield International.

- Kellert SR. 2002. Experiencing nature: Affective, cognitive, and evaluative development in children. In: Kahn Jr. PH and Kellert SR. (Eds). *Children and Nature: Psychological, Sociocultural, and Evolutionary Investigations*. Cambridge, UK: The MIT Press
- Kals, E., Schumacher, D., & Montada, L. (1999). Emotional Affinity toward Nature as a Motivational Basis to Protect Nature. *Environment and Behavior*, 31(2), 178-202. doi:10.1177/00139169921972056
- Kastner, J., & Wallis, B. (2015). *Land and environmental art*. London: Phaidon Press.
- Keniger, L., Gaston, K., Irvine, K., & Fuller, R. (2013). What are the Benefits of Interacting with Nature? *International Journal of Environmental Research and Public Health*, 10(3), 913-935. doi:10.3390/ijerph10030913
- Klaver, J. I. (2016). Re-Rivering Environmental Imagination: Meander Movement and Merleau-Ponty. In *Nature and Experience: Phenomenology and the Environment* (pp. 113-128). London: Rowman and Littlefield International.
- Leopold, A., Schwartz, C. W., & Leopold, A. (1968). *A Sand County almanac*. London, etc.: Oxford University Press.
- Miller JR. (2005). Biodiversity conservation and the extinction of experience. *Trends Ecology Evolution* 20, 430-434.
- Muraca, B. (2016). Re-appropriating the Ecosystem Services Concept for a Decolonization of 'Nature'. In *Nature and Experience: Phenomenology and the Environment* (pp. 143-156). London: Rowman and Littlefield International.
- Naustdalslid, J. (2011). Climate change – the challenge of translating scientific knowledge into action. *International Journal of Sustainable Development & World Ecology*, 18(3), 243-252. doi:10.1080/13504509.2011.572303

- Opermanis, O., Kalnins, S. N., & Aunins, A. (2015). Merging science and arts to communicate nature conservation. *Journal for Nature Conservation*, 28, 67-77.
doi:10.1016/j.jnc.2015.09.005
- Pointon, P. (2014). 'The city snuffs out nature': Young people's conceptions of and relationship with nature. *Environmental Education Research*, 20(6), 776-794. Retrieved October 14, 2018.
- Richardson, K., Gibson, P., Torrell, E., Hayeur, I., Stankievech, C., Assu, S., & Belmore, M. (2013). Form With Function: 7 Canadian artists muse on the meaning of environmental art and why we need it. *Alternatives Journal*, 39(3), 38-45. Retrieved September 7, 2018.
- Sessions, G. (1991). Ecocentrism and the anthropocentric detour. *ReVision*, 13(3), 109. Retrieved from
<http://ezproxy.uvu.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=r1h&AN=9608013339&site=eds-live>
- Shanahan, D. F., Fuller, R. A., Bush, R., Lin, B. B., & Gaston, K. J. (2015). The Health Benefits of Urban Nature: How Much Do We Need? *BioScience*, 65(5), 476-485.
doi:10.1093/biosci/biv032
- Soga, M., & Gaston, K. J. (2016). Extinction of experience: The loss of human-nature interactions. *Frontiers in Ecology and the Environment*, 14(2), 94-101.
doi:10.1002/fee.1225
- Springer, E. (2016). Metaphor and Weather: Thinking Ecologically about Metaphor, Experience, and Climate. In *Nature and Experience: Phenomenology and the Environment* (pp. 81-96). London: Rowman and Littlefield International.

- Takano T, Nakamura K, and Watanabe M. (2002). Urban residential environments and senior citizens' longevity in megacity areas: The importance of walkable green spaces. *J Epidemiol Community Health* 56, 913-918.
- Thibodeau, P. H., Frantz, C. M., & Berretta, M. (2017). The earth is our home: Systemic metaphors to redefine our relationship with nature. *Climatic Change*,142(1-2), 287-300. doi:10.1007/s10584-017-1926-z
- Thompson, C. W., Aspinall, P., & Montarzino, A. (2007). The Childhood Factor. *Environment and Behavior*,40(1), 111-143. doi:10.1177/0013916507300119
- Turner, W. R., Nakamura, T., & Dinetti, M. (2004). Global Urbanization and the Separation of Humans from Nature. *BioScience*,54(6), 585-590. doi:10.1641/0006-3568(2004)054[0585:guatso]2.0.co;2
- Ünal, A. B., Steg, L., & Gorsira, M. (2017). Values Versus Environmental Knowledge as Triggers of a Process of Activation of Personal Norms for Eco-Driving. *Environment and Behavior*,50(10), 1092-1118. doi:10.1177/0013916517728991
- Weinstein, N., Rogerson, M., Moreton, J., Balmford, A., & Bradbury, R. B. (2015). Conserving nature out of fear or knowledge? Using threatening versus connecting messages to generate support for environmental causes. *Journal for Nature Conservation*,26, 49-55. doi:10.1016/j.jnc.2015.04.002
- Weintraub, L. (2012). *To life!: Eco art in pursuit of a sustainable planet*. Berkeley: University of California Press.
- Wells, N., Lekies, K. (2006). Nature and the life course: Pathways from childhood nature 415 experiences to adult environmentalism. *Child Youth Environment*, 16, 1-24.

Wilson EO. (1993). Biophilia and the Conservation Ethic. In: Kellert S and Wilson EO (Eds).
The Biophilia Hypothesis. Washington, DC: Island Press.