

Grading exam questions for SGO2302: Environment and Society, Spring 2020

Students were asked to answer one of three “situational” exam questions. The questions challenge students to think about social science perspectives on environmental issues, and it provides them with an opportunity to synthesize, integrate, and communicate the course material in a manner that demonstrates what they have learned during the semester.

The course this year focused heavily on climate change, but the topics and themes were relevant to all issues, including biodiversity loss. There is no “one correct answer” to these questions – we are rather looking to see how they approach the question and how much information and learning they can pull together from the course. All three questions ask the students to take an integrative approach to the topic as well as reflect on what such an approach might look like in practice. This latter part of the questions is an invitation for students to be creative and (more so than the other parts of the question) there is no right or wrong answer. It is important, however, that students make an honest attempt to become concrete by linking problems and solutions.

Students were asked to bring in readings from the course curriculum, which included the Climate and Society textbook. Though there was no specific number of references to include, the A and B answers will generally integrate a wider variety of readings. Though many could answer the questions adequately with only the main text book, we are looking for more depth and a greater capacity to think laterally, thus would like to see them bring together more “threads” from the readings. It is acceptable, and sometimes highly relevant, to bring in external literature, but students were encouraged to limit this to a minimum and focus on the curriculum. If students mainly reference external literature, this should subtract from their final grade.

1. Dealing with Impacts: Insights into Human Security

The first question focuses on impacts from climate-related environmental changes or events such as extreme weather events, and how to respond to such impacts. Students are asked to explore the insights gained from looking at climate change impacts through the social sciences and particularly through the concept of human security. Students might situate themselves in relation to the context of the question (UNEP) and draw on the example of extreme events (wildfires in Australia), but this is not a requirement.

Students are asked to first define human security as an integrative concept. There is not one right definition, but the students should highlight different aspects of the concept, from practical (e.g. basic needs, livelihoods) to political (e.g. political agency, resource access) to personal (e.g. mental health, well-being). They should also recognize that human security is closely related to social, political, and institutional contexts.

Secondly, students are asked to discuss two insights into what the human security concept brings to our understanding of climate change impacts, drawing on one or several of the concepts/dimensions: vulnerability, adaptation, equity, culture, worldviews, and emotions. We have received several questions about what we mean by “insights,” and students will likely interpret this aspect of the question differently. Some might choose to draw from their definition of human security while others might choose to go broader in terms of the general themes of the course (perspectives, human-environment relations). As with the exam in general, better answers will draw in a variety of different topics and weave them together. Students are expected to engage with the equity dimension to some degree as this is a key component of the course. However, it might be more of an underlying theme than one of the insights. For this part of the assignment, students might:

- Focus on the intersection between climate change and other issues, such as violent conflict (Barnett and Adger 2007), globalization and the creation of winners and losers (O’Brien and Leichenko 2000), or sustainable development (Reckien et al. 2017; Roberts and Parks 2010)
- Discuss how existing inequalities influence vulnerabilities to climate change impacts, or question what it means to be vulnerable (Ribot 2014; Leichenko and Silva 2014), potentially drawing in the concept of resilience (Brown 2013). Some may highlight climate change as a “threat multiplier,” particularly in relation to food insecurity and water insecurity.
- Explore the need for adaptation and the uneven impacts and capacities for adapting (Scoville-Simonds et al 2019; Shi et al. 2016).
- Discuss the importance of culture in terms of the relationship between humans and the environment as it links to climate change (Heyd and Brooks 2009; Tibbs 2011), as well as cultural expectations and blind spots that influence the ability or willingness to adapt to climate change (Wilhite 2016).
- Draw in other ways of knowing and relating to the natural environment as well as Indigenous conceptualizations of humans as an integrative part of nature (Berkes 2008)
- Focus in on the importance of the emotional responses to climate change impacts and how articulating and making room for grief is an important aspect of recognizing impacts and adapting to climate change (Head 2016). Other issues of health and well-being may be discussed as well.
- Focus on human security in a larger perspective by highlighting the difference between simply adapting to the changing climate and all together transforming society to curb climate change (O’Brien 2018)

Lastly, students are asked to link their insights to possible response strategies. This is the “so what” part of the question, and students are free to be creative. Some might go back to the example of wildfires in Australia in order to anchor their response. The aim of this last task is for the students to think through how these more or less intangible elements can result in actual strategies and approaches, making a link between problems and solutions. Some might focus on adaptation in terms of concrete measures that deal with inequalities, while others might focus more on the intangibles of emotions and values. Others still might focus on the need for social, economic, and political transformations that reduce the risk of dangerous climate change and address vulnerability.

2. Discourses on Change: Should we be Optimistic or Pessimistic about the Future?

The second question focuses on different discourses on climate change and society's ability to change. It presents two diverging perspectives on the possibility for climate action, both linked to the context of COVID-19. While one is positive and the other negative in terms of how the pandemic might influence action on climate change, students are asked to take an integrative approach to the possibilities for society to respond to climate change and related global challenges.

Climate change discourses have been central throughout the course and it is likely that many students will choose to answer this question. While some students might stick closely to the textbook, since this is where the four discourses are discussed, the A and B answers will draw on a wide range of readings from the curriculum to explore how these discourses relate to other issues, such as values, worldviews, human-environment relationships, etc. Some external literature might be useful in order to engage with the context of COVID-19, but the emphasis should still be on the course curriculum.

Students are asked to first explain what a discourse is and discuss the role of worldviews, values and beliefs for what discourses people resonate with. Besides the textbook, students might

- Draw in Dryzek (2012) for a definition
- Focus on the role of culture (Heyd and Brooks 2009) and assumptions about human-environment relations (Berkes 2008; Head 2016)
- Bring in narratives and stories and the importance of what stories we are telling for how we come to see reality and engage with the environment (Milkoreit 2016; Ingram et al. 2015)

In exploring how the four discourses on climate change differ, students are expected to focus on how climate change is viewed as well as what solutions are considered. Good answers will not only list the discourses but relate them to each other and identify nuances and possible overlaps. Students might mention

- Planetary boundaries (Steffen et al 2011) as a guiding principal for the biophysical discourse
- Issues of social justice (Shi et al. 2016; Jenkins et al. 2016) as central for the critical discourse
- Cognitive dissonance and various forms of denial (Stoknes 2015), especially in connection to the dismissive discourse
- Perspective taking capacities as a component of the integrative discourse, relating practical, political and personal dimensions and recognizing "both/and" perspectives (O'Brien 2018).

Lastly, students are asked to take an integrative perspective on "optimism" and "pessimism," focusing on possibilities for climate action in this current moment with examples of what that might look like in practice. Here we are expecting students to go beyond any one discourse and perspective to weave together a more holistic picture of society's ability to change in the face of climate change. Here some students might engage more directly with external literature in the form of opinion pieces and analyzes of COVID-19, while others might approach the question more generally. Good answers will identify tensions between discourses as well as synergies. Students might return to the role of values and worldviews in shaping how problems are defined and addressed. They might consider how seeing climate change as linked to multiple stressors such as globalization can widen the solution space, making addressing issues of jobs, and livelihoods equally important. They should emphasize the importance of recognizing both the biophysical and social dimensions together, and open up a wider range of practical and political solutions, while at the same time recognizing that not all solutions will benefit all, and that some could actually add to global risks and amplify global inequality.

In providing examples of what an integrative perspective on possibilities could look like in practice, it is again up to the students to think creatively and there is no right or wrong answers. Here we are wanting the students to move from a quite abstract level of thinking to becoming more concrete – recognizing that this is challenging!

3. Climate Change and Biodiversity Loss: Bridging the Gaps for Transformative Change

The third question is about transformative change and how to ensure that such changes are equitable and sustainable, using climate change and biodiversity loss as examples. Here we are wanting the students to show their ability to think across topics and identify key relationships, feedbacks, and synergies between otherwise distinct societal challenges. Again, the task is to think integratively and show a comprehensive understanding of the challenges and possibilities for systems change, this time focusing on the interlinkages between biodiversity loss and climate change.

The question is closely linked to the IPBES “Global Assessment Report on Biodiversity and Ecosystem Services,” and it is likely that students will draw on this report to some extent. It is not necessary to do so, however, and since it is not part of the curriculum it should not account for the majority of references.

Firstly, students are asked to highlight some of the main connections between climate change and biodiversity loss. Here we expect students to not only describe some of the environmental linkages, e.g. that increasing temperatures or acidification of oceans threaten certain species, but to explore the drivers of these challenges. Students might

- Link climate change and biodiversity loss to certain types of development (Maxwell et al. 2016)
- Highlight farming and land use practices (Vermeulen et al. 2012; Vijay et al. 2016) and energy production (Gibbs 2017)
- Point to lifestyles and consumption as a root cause of these challenges (Dietz et al. 2007)

Secondly, students are asked to present the Three Spheres of Transformation framework (O’Brien 2018; Leichenko and O’Brien 2019) and discuss how this might be useful for creating strategies that target both climate change and biodiversity loss. In doing so, we ask that they use a system as example, such as energy, food or transportation, and explore interlinkages between this and other systems. Thus, we expect students to explore how to work with the challenges of biodiversity loss and climate change across the three spheres (practical, political and personal) as well as across different systems. Students must show that they understand the importance of operating across all spheres as well as being mindful of the interlinkages between different societal challenges and systems. They should identify specific measures that can address both biodiversity loss and climate change, discuss the systems and structures that can support them, and link these to beliefs, values, and worldviews and different views of nature (e.g., nature as capricious, benign, tolerant, or fragile) (Leichenko and O’Brien, 2019, ch. 4)

Practically all readings in the curriculum could be relevant in this context. It depends on what direction the students take the assignment. Similarly as with the previous task, issues of development, production and consumption are obvious places to explore. Within these, they might

- Focus on logics and values embedded within our systems of production and consumption (Wilhite 2016; Ehrhardt-Martinez et al. 2015)
- Draw on our cultural norms and relationship with the natural environment (Tibbs 2017; Berkes 2008; Weber and Kurt 2015)
- Highlight the equity dimensions of both drivers of and impacts from biodiversity loss and climate change (Zoomers 2010; Jenkins et al 2016)

As with the other two questions, the equity dimension is central and students should engage with this to some degree. Getting concrete in terms of strategies is challenging and here it is up to the students to be creative and think outside the box. Interestingly, this process is ongoing within IPBES at the moment, so students may actually be able to contribute towards this important work!

Readings included in the course curriculum:

Main books

Leichenko, R. M. and O'Brien, K. 2019. *Climate and Society: Transforming the Future*. Cambridge: Polity Press. (250 pages)

Available as e-book

▫Berkes, F. 2008. Context of Traditional Ecological Knowledge. Chapter 1 (Pages 1-20) in: Berkes, F. 2008, 4th edition. *Sacred Ecology*. Abingdon: Routledge. (20 pages) E-book

▫Brown, K. 2013. Social Ecological Resilience and Human Security. Chapter 9 (Pages 107-116) in Sygna, Linda, Karen O'Brien and Johanna Wolf (eds.), *A Changing Environment for Human Security: Transformative Approaches to Research, Policy, and Action*. London, UK: Routledge-Earthscan. (10 pages) E-book

▫Dryzek, J. 2013. Making Sense of Earth's Politics: A Discourse Approach. Chapter 1 (Pages 3-23) in Dryzek, John. 2013. *The Politics of the Earth: Environmental Discourses* Oxford: Oxford University Press. (21 pages)

▫Ehrhardt-Martinez, K. and Schor, J.B. et al. 2015. Consumption and Climate Change. Chapter 4 (Pages 93-106) in Dunlap, R. and Brulle, R. (eds.) *Climate and Society*, London. Routledge. (14 pages) E-book

▫Head, L. 2016. Grief will be our companion. Chapter 2 (pages 21-37) in Head, Lesley. 2016. *Hope and Grief in the Anthropocene: Re-Conceptualising Human-nature Relations*. New York, NY: Routledge. (17 pages) E-book

▫Heyd, T. and Brooks, N. 2009. Exploring cultural dimensions of adaptation. Chapter 17 (Pages 269-282) in: Adger, N. W., Lorenzoni, I. and O'Brien, K. (eds.) *Adapting to Climate Change- Thresholds, Values, Governance*. Cambridge University press, UK (14 pages) E-book

▫Milkoreit, M. 2016. The Promise of Climate Fiction – Imagination, Storytelling and the Politics of the Future. Chapter 10 (Pages 171-191) in: Wapner, P. and E. Hilal (eds.) 2016, *Reimagining Climate Change*. Routledge Publishing (21 pages) E-book

▫Riedy, C. 2019. The Witnesses. Pages 1- 15 in K. O'Brien et al (eds) *Our Entangled Future: Stories to Empower Quantum Social Change*. (15 pages) E-book.

▫Sharma, M. 2017. The Radical Systems and Cultural Transformer: Everyone's Contribution. Chapter 9 (Pages 209-231) in *Radical Transformational Leadership: Strategic Action for Change Agents*. North Atlantic Books. (23 pages) E-book

☐Stirling, A. 2015. Emancipating transformations: from controlling ‘the transition’ to culturing plural radical progress. Chapter 4 in: I. Scoones et al. 2015. *The Politics of Green Transformations*. (Pages 54-67) London: Routledge/Earthscan. (14 pages) E-book

☐Wilhite, H. 2016. A theory of Habits. Chapter 2 in: Wilhite, Harold. 2016. *The Political Economy of Low Carbon Transformation: Breaking the Habits of Capitalism*. (21-39) London : New York: Routledge, Taylor & Francis Group. (19 pages) E-book

In compendium

*Singh, V. 2016. Entanglement. In: J.J. Adams (eds.) *Loosed Upon the World: The Saga Anthology of Climate Fiction*. (269-322). London: Saga (54 pages)

*Stoknes, Per Espen. 2015. What We Think About When We Try Not to Think About Global Warming. Pages 54-84 (Chapters 5-7). White River Junction, VT: Chelsea Green. (31 pages)

Available online

@Barnett, J. and Adger, W.N. 2007. Climate Change, Human Security and Violent Conflict. *Political Geography*, 26, 6. 639–655. Available online (17 pages)

@Dietz, T., Rosa, A. and York, R. 2007. Driving the human ecological footprint. *Frontiers in Ecology and Environment* 5, 1: 13-18. Available online (6 pages)

@Gibbs, W. Wayt. 2017 “How Much Energy Will the World Need?” *Anthropocene Magazine*. Available online (4 pages)

@Ingram, M., Ingram, H. and Lejano, R. 2015. Environmental Action in the Anthropocene: The Power of Narrative Networks. *Journal of Environmental Policy & Planning*, November. 1–16. Available online (16 pages)

@Jenkins, K., McCauley, D., Heffron, R., Stephan, H., Rehner, R., 2016. Energy justice: A conceptual review. *Energy Research & Social Science*. 11: 174–182. Available online (9 pages)

@Leichenko, R. and Silva, J.A. 2014. Climate Change and Poverty: Vulnerability, Impacts, and Alleviation Strategies. *Wiley Interdisciplinary Reviews: Climate Change*. 5, 4: 539–56. Available online. (18 pages)

@Maxwell, S. Fuller, R., Brooks, T. and Watson, J. 2016. Biodiversity: The ravages of guns, nets and bulldozers. *Nature* 536, 7615: 143-145 Available online (3 pages)

@McGlade, C. and Ekins, P. 2015. The Geographical Distribution of Fossil Fuels Unused When Limiting Global Warming to 2 °C. *Nature* 517, 7533: 187–90. Available online. (3 pages)

@O'Brien, K. 2018. Is the 1.5°C Target Possible? Exploring the Dynamics of Social Transformations. *COSUST* 31: 153-160 Available online (7 pages)

@O'Brien, K. and Leichenko, R. M. 2000. Double Exposure: Assessing the Impacts of Climate Change within the Context of Economic Globalization. *Global Environmental Change* 10, 3: 221–32. Available online (12 pages)

@ Reckien, D., Creutzig, F., Fernandez, B., Lwasa, S., Tovar-Restrepo, M., McEvoy, D. and Satterthwaite, D.. 2017. Climate Change, Equity and the Sustainable Development Goals: An Urban Perspective. *Environment and Urbanization* 29, 1: 159–82 Available online (24 pages)

@Ribot, J., 2014. Cause and response: Vulnerability and climate in the Anthropocene. *The Journal of Peasant Studies*, 41 (5), 667–705. Available online (38 pages)

@Roberts, J. T. and Parks, B. C. 2010. A “shared vision”? Why inequality should worry us. In: O'Brien, Karen, Asunción Lera St Clair, and Berit Kristoffersen, (eds.) 2010. *Climate Change, Ethics and Human Security*. (65-82) New York: Cambridge University Press. Available online (18 pages)

Scoville-Simonds, M., Jamali, H., and Hufty, M. 2019. The Hazards of Mainstreaming: Climate change adaptation politics in three dimensions. *World Development* 125 Available online (10 pages)

Shi, L. et al. 2016. Roadmap towards justice in urban climate adaptation research. *Nature Climate Change* 6: 131–137. Available online (7 pages)

@Steffen, W.S., Rockström, J. and Costanza, R. 2011. How Defining Planetary Boundaries Can Transform Our Approach to Growth Solutions. *Solutions: For a sustainable and desirable future*. 2, 3: 1-8 Available online (8 pages)

@Tibbs, H. 2011. Changing Cultural Values and the Transition to Sustainability. *Journal of Futures Studies*, 15, 3: 13 – 32. Available online (20 pages)

@Vermeulen, S.J., Campbell, B.M., and Ingram, J.S.I., 2012. Climate Change and food systems. *Annual Review of Environment and Resources*, 37 (1), 195–222. Available online (28 pages)

@Vijay, V., Pimm, S. L., Jenkins, C. N. and Smith, S. J. 2016. The Impacts of Oil Palm on Recent Deforestation and Biodiversity Loss. *PLOS ONE*. 11, 7: 1-19 Available online (19 pages)

@ Weber, A. and Hildegard, K. 2015. Towards Cultures of Aliveness: Politics and Poetics in a Postdualistic Age, an Anthropocene Manifesto. *The Solutions Journal* 6, 5. 58-65. Available online (8 pages) (NOTE: mistake in the curriculum – correct reference is Weber and Kurt 2015)

@Zoomers, A. 2010. Globalisation and the foreignisation of space: seven processes driving the current global land grab. *Journal of Peasant Studies*. 37, 2: 429-447. (19 pages) Available online