

## Sensorveiledning SGO 3200 Spring 2019

Students have to answer three out of five questions. All the three questions should be weighted equally when deciding the grade.

*Question 1. Describe the key components of ecological modernization theory. What are the major critical points raised against ecological modernization theory?*

Ecological modernization theory (EMT) emerged in the 1980 and 1990s as an attempt to tackle environmental problems in industrialized western societies. EMT seeks solutions from within these societies based on innovation and reforms. EMT is more concerned with processes than structures. The critique raised among others by Rosalind Warner (2010) questions whether EMT is a relevant answer in the light of the current problems including climate change and nature protection. The critical points raised includes concerns about lack of reflexivity, or self-critique as an important component of a needed radical social change. The (radical) critique asks for an alternative perspective that explicitly raises questions about power. The existing power relations are anathema to EMT. It is questioned whether the current power relations can be part of a future tackling global environmental problems seriously.

*Question 2. Deep decarbonization has been proposed as necessary to stop human made climate change. What is meant by deep decarbonization? What role can innovation have to support deep decarbonization?*

The paper published in Science by Geels et al (2017) discusses deep decarbonization and sociotechnical transitions. The dependence on carbon (oil, gas and coal) across sectors including electricity, transport, heat, industry and agriculture and the resulting global environmental problems is what motivates decarbonization. However, despite progress in some areas, such as the growth in solar energy, the rate of progress towards the wider goal of deep decarbonization remains low. Innovation will have a major role to play in a large scale transition towards decarbonization. Within the soci-technical systems perspective innovation is placed within a larger societal context. There is a distinction between niches, paradigms and landscape in this perspective. Many important and often radical innovations are developed within niches. Less radical innovations are mostly found in the paradigms. The question allows for different ways of discussing how innovations can contribute to deep decarbonization.

*Question 3. Frank Avelino (2017) argues there is a qualitative difference between power to create and power to reproduce the existing. Describe the three different types of power he introduces. Use examples.*

It is a great advantage to have good knowledge of Frank Avelino's paper to be able to answer this question. There are many new innovative solutions available to reduce environmental challenges. They are however only partly applied at current and we still rely on old and often carbon based technology. Avelino proposes a conceptualization of power that is helpful in shedding light on this situation. He makes a distinction between three types of power; reinforcing, innovative and

transformative. Reinforcive power is the capacity of actors to reproduce existing structures and institutions. Actors with the capacity to create new resources have innovative power. Actors with the capacity to create new structures and institutions have transformative power.

*Question 4. Social innovation can be understood either as friendly liberalism or based on a more critical interpretation according to Jessop et. al (2013). Explain the similarities and differences between the two interpretations. Use examples.*

When social innovation (SI) is interpreted as friendly liberalism society is often seen as an aggregate of individuals, while the institutionalized character of society is forgotten. Market and business oriented solutions are privileged over social movements. Economic agency is privileged over other types of socially motivated types of agency. A critical understanding of SI recognizes the role of collective action and aims to promote innovations in social relations. SI is linked to debates in social theory and ethical debates.

*Question 5. It is being argued that technological innovation far from serving human needs, is driving development in directions potentially opposed to sustainability. Discuss this statement and propose how innovation better can support sustainability transitions.*

This is a relatively open question which can be answered in many ways. Several articles on the reading list are useful. As a starter it is clear that the major fossile technologies, such as petrol engines, all are based on previous innovations. Today we need innovations and new technologies that address such problems. The concept of sustainability oriented innovation systems is important. This concept places high demands on governments that need to disrupt unsustainable technological pathways and encourage alternative, more sustainable technologies. Examples that are discussed in the course include Danish wind mills, the German “energiwende” and electric cars in Norway.