

## **NTNU, TRONDHEIM**

Norges teknisk-naturvitenskapelige universitet

Institutt for sosiologi og statsvitenskap

### **EXAM IN POL1003 SPRING 2018 THE POLITICS OF THE ENVIRONMENT, ENERGY AND RESOURCE-MANAGEMENT**

Contact during the exam: Ole Magnus Theisen

Phone: 73590267/90035558

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Credits: 7,5

Remedies: None

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Grades announced on: XXXX

#### **ENGLISH**

The candidate must answer all eight questions. In the grading, the answers for each task will count equally for the final grade of the exam. Please note that all tasks should be answered relatively shortly.

- 1. What is the Prisoner's dilemma? When is its application useful and not so useful?**
- 1. Hva er fangens dilemma (the prisoner's dilemma)? Når er det relevant og når er det mindre relevant?**
- 1. Kva er fangens dilemma (the prisoner's dilemma)? Når er det relevant og når er det mindre relevant?**

All students should be able to give a rough description of what the prisoner's dilemma (PD) is, and how it is relevant for environmental politics. This has both been repeatedly explained (and demonstrated) in the lectures and it is also well described in Ostrom (1990) on the curriculum. The core of the PD is that two rational agents both face the same tradeoff: to cooperate or defect, which in total yields four different outcomes. If both cooperate they will be given a comparatively small punishment; if both defect, then both will get a punishment that is higher than if both cooperated; if prisoner A defects while prisoner B cooperates prisoner A will walk free and prisoner B will get an even higher punishment than he would if both defected. The converse applies if A cooperates and B

defects. This latter situation is what both prisoners try to avoid. Since they do not communicate, they both choose to defect in order to avoid ending up in the situation where they cooperate but the other defects. Thus, it is a non-cooperative game but also with complete information, meaning that the prisoners know the potential payoff for each scenario and base their decisions on this. Those who elaborate on the Pareto-suboptimality of the outcome of the game, which in essence means that we do not get collectively rational strategies if we follow individually rational strategies, should be credited. So should those that relate this to commitment problems when it comes to solving international environmental problems. Extra credit should be given to those who see that PT is a simplification/formalization of the Tragedy of the commons. Full credit should be given to those who point out that one solution to the PD is to regulate behavior with an overarching institution or that repeated games often increases the chances of Pareto-optimal outcomes.

Calling this the 'Hardin herder game' is also acceptable as this is what Ostrom sets it up as. Here the prisoners are swapped with herders and punishment swapped with gain, except for the 'sucker' who will lose slightly.

- 2. Why is anthropogenic climate change a malign environmental problem to solve?**
- 2. Hvorfor er menneskeskapt klimaendring et spesielt vanskelig miljøproblem å løse?**
- 2. Kvifor er menneskeskapa klimaendringar eit særskild vanskeleg miljøproblem å løyse?**

This questions draws on Underdal (2002) and Hovi, Sprinz, and Underdal (2009). Most answers should say that climate change is a particularly malign environmental problem to solve both because of the intellectual complexity and because of its political malignancy – primarily due to time-inconsistency, domestic politics, and international anarchy, and the interplay between these. The justice vs. abatement argument has also proved important in blocking progress in negotiations. Whereas scientific malignancy has not been in focus, the students should be able to say more on the political malignancy, and good answers will also say that the two forms of malignancy interact to make matters worse. In particular, they should bring in the extent to which there are problems of incongruity, caused either by actors biased in either costs and/or benefits of a certain policy or regime; that competition and/or externalities can give rise to incongruities. The role of strategic interaction that could make matters worse should also be mentioned. Students that link this discussion to interest-based models should be credited for this, likewise those who elaborate on how malignancy can be made worse with increasing asymmetry and cumulative cleavages should be credited.

Very good answers will discuss how the failure of the Copenhagen summit lead to the Paris agreement's bottom-up approach which is an attempt directly aimed at reducing the malignity of an anarchic system.

- 3. What are the three main indicators for evaluating regime effectiveness?**
- 3. Hva er de tre hovedindikatorne for å evaluere regimeeffektivitet?**
- 3. Kva er dei tre hovudindikatorane for å evaluere regimeeffektivitet?**

This is a question of medium difficulty. Most students should know that we are after the concepts output, outcome, and impact and the tradeoffs between validity and availability should be discussed. Thus, the lecture the presented and discussed:

1: Validity concerns: Do you measure what you want to measure?

i) Theoretical concept vs. empirical operationalization

2: Data availability concerns: What data are available?

i) Time-lag between implementation and result

The three concepts that were discussed with regards to measuring regime effectiveness were output, outcome, and impact.

Output: The new set of rules and regulations, which could be at the international level or at the national level. Usually a regime has rules/laws on both levels. This indicator is typically concerned with the formation stage (earliest stage) of a regime. However, political goals are not always achieved. For example for climate change this means that we have the data readily available, but the validity of the data could be low as the laws do not say anything about the implementation.

Outcome: State behavior or sub-state behavior. Agreements at the international level almost could identify what should be expected in terms of behavioral changes. For example, data on CO2 emissions are readily available, and emission reduction is necessary for the regime to be successful.

Impact: Biophysical changes in nature. This is the ultimate objective of a regime and therefore has the highest validity. There are some issues with this indicator; i) change in nature is a slow process (time-lag), and ii) scientific certainty changes. For climate change, validity is high for changing composition of GHG in the atmosphere. However, there are data availability issues, as described above.

Conclusion: The weighting of the three alternatives depends on the problem at hand, how far into the process one is, and data availability.

Students that apply these criterion to a specific environmental regime/real world case should be given extra credit for this.

- 4. Describe the main differences between the survivalist/limits and survival discourse on the one hand and the problem-solving discourse/group of discourses on the other?**
- 4. Beskriv hovedforskjellene mellom 'survivalist/limits and survival'-diskursen på den ene siden og problemløsningsdiskursen/gruppen av diskurser på den andre.**
- 4. Beskriv hovudskilnadane mellom 'survivalist/limits and survival'-diskursen på den eine sida og problemløysingsdiskursen/gruppa av diskursar på den andre.**

This is covered in Dryzek (2013) chapter 2 and part II.

Survivalism: The earlier version of the discourse was referred to as “Survivalism”, whereas the contemporaneous version is called “Limits and Survival (LAS)” in the most recent edition of Dryzek’s book. The naming should not affect the grading of the answer. An acceptable answer should include that Survivalism is a discourse who see clear limits to the current economic system, and if unchecked, it will pose the Globe at risk. Moreover, students should know that survivalism sees environmental problems as very real, and that the solution to these lies in a wholesale remaking of the existing capitalist system away from the growth imperative. Hence it is radical. This must be achieved by known and proven means – most notably checking population growth – hence it is prosaic.

Students should also know that the basic entities of the discourse are: that there are clear boundaries to carrying capacity; (and therefore) that there are clear boundaries of ecosystems; that elites are necessary to control the actions of populations. Assumptions of the discourse are that: there is a conflict of interest between the individual and the collective, and therefore hierarchy is needed. Those who say that more recent versions of survivalism have softened on the latter point should be awarded extra credit. Agents and motives of the discourse are elites, while populations are largely seen in aggregates as numbers, and therefore without much agency. Moreover, the discourse recognizes ecosystems, but is fully anthropocentric. Common metaphors are: overshoot, collapse, the tragedy of the commons, Spaceship Earth, exponential growth, virus, cancer. Extra credit should also be awarded to those that refer to biology as a discipline which has had substantial influence on the way the discourse is framed. Good answers will also say that the discourse have had little practical impact, arguably due to its focus on elites.

The problem-solving discourse/group of discourses consists of three main branches: administrative rationalism, democratic pragmatism, and economic rationalism. Students are not expected to elaborate on the three different perspectives, but should be able to say which discourses fits within this category, and then relate these in general to survivalism. For some students, this comparison can be difficult.

The problem-solving discourse is prosaic (Environmental problems solved with established approaches) and reformist (Takes industrialism as given). The latter is a quite important difference from the survivalist assumption and students should be able to point this out in order to get an average grade. The problem-solving group of discourses recognizes environmental problems, but treats them as tractable within the basic framework of the political economy of industrial society. The focus here is naturally problem-solving, and not overshoot and collapse, thus the approach and worldview is much less dramatic than that of survivalism. Different varieties of these discourses reveal different conceptions about how to best organize problem solving, especially when social problems require coordination of large numbers of individuals. Those who point to that administrative rationalism is much closer to survivalism than in particular democratic pragmatism especially when it comes to the tools at hand, should be awarded for this. Those who add that survivalism has moved in a participatory direction, hence becoming somewhat closer to democratic pragmatism should also be awarded for this?

A very important criterion for judging the answers is whether the students discuss the different aspects of each of the two discourses in relation to each other. For example, do they discuss the extent to which each of the discourses is anthropocentric.

**5. What is the 'entitlement approach' to explaining famines?**

**5. Hva er 'entitlementtilnærmingen' til? på sult?**

**5. Kva er 'entitlementtilnærminga' til? på sult?**

The students have read Sen's (1980) article 'Famines'. Most students should know that the entitlement approach to explain famines is a pushback to the so-called Food Availability Decline (hereafter FAD) explanation of famines which states that famines are basically a product of less food per capita. Although Sen does not deny the potential contributory role of FAD, the entitlement approach asks the question of whether or not a person, household, or group can get hold on food or not, by legal means. Thus absolute shortage in food production (FAD) is seen as only one of many causes of people not having enough food and hence causing famine, and its role is only indirect. At the core, Sen's approach is about the relationship between persons and commodities. Two concepts are central. First, endowment is your ownership situation in terms of land, money, real estate, and other goods (including food), in essence a person's ownership situation. Second, exchange entitlements are what you can exchange from your existing entitlements. Thus, for each of your endowments there is a set of alternative commodity bundles you can get hold of. A change in your exchange entitlement basically means a change in your 'exchange rate' (e.g. wages, food prices). Famines can be caused through entitlement losses by both endowment losses and negative changes in the exchange entitlement.

Most students should be able to point to Sen's seminal insight: there can be famine without any substantial FAD. More advanced answers will show how the entitlement approach can explain different forms of famines, more specifically slump and bust famines. The best answers could also go into detail explaining famines caused by direct entitlement failure (failure of food production for farmers causing lack of income to purchase food as well as less direct access to food) versus famines caused by trade entitlement failure (famines affecting groups not producing food).

Students that point out the policy lesson that you cannot only provide food relief, but you must also make sure that needy people can afford the exchange to get hold of food should be credited, as only providing food would be according to the FAD explanation of famine, whereas ensuring the entitlement to food follows the entitlement approach. Extra credit should be awarded to those who see the entitlement approach as a market-oriented approach – thus a well-functioning market can have devastating famines, you can have counter-intuitive processes such as food-counter movements should be credited. Moreover, some may also bring up that the entitlement approach has a limitation in that it excludes illegal sources of food and food-deprivation are ruled out as well as food-related taboos, and students should be credited for pointing out this.

This is a quite difficult question intended to distinguish between the very good and the rest of the answers.

**6. Explain Russia's primary energy security concerns.**

- 6. Forklar Russlands viktigste energisikkerhetsbetraktninger.**
- 6. Forklar Russlands viktigaste energisikkerhetsbetraktningar**

All students are expected to know that Russia is an energy exporter, primarily of oil and gas. Following this, they should also be able to say that in contrast to most countries which are net importers of energy, Russia is primarily concerned with security of demand, in contrast to the dominant view in industrialized countries of ensuring the security of supply. Students are expected to roughly define security of demand, which entails the concern of energy-exporting countries of whether they will have a secure and stable export market for their energy resources at high enough prices to finance their energy sector. The better answers should then move on to discuss Russia's challenge with large untapped reserves that require expensive infrastructure to sustain its energy production, and how Russia tries to involve non-national partners in these development efforts as this is too costly for domestic actors. Moreover, students should say something about the tightening of control of the Russian state since the 2000s over the energy market by its state-dominated companies, in particular Gazprom and Rosneft. The best answers should also point out that oil and gas are strategic resources which gives Russia extra power in its geopolitical strategy of strengthening its major power status. They should thereafter elaborate on how this affects Russia's foreign policies in particular with relation to the EU member states, and how the vie for power must be balanced against a cordial relationship with EU buyers as Russia needs a relatively high price for its energy products. Those who discuss the development of different gas lines should be credited for this. The very best answers will also discuss the energy dialogue between the EU and Russia. Those who say something substantive about this, should be given extra credit.

- 7. What are the most common explanations for why countries reliant on oil exports on average are less democratic?**
- 7. Hva er de vanligste forklaringene på at land avhengige av oljeeksport i snitt er mindre demokratiske?**
- 7. Kva er dei vanlegaste forklaringane på at land avhengige av oljeeksport i snitt er mindre demokratiske?**

This question is primarily based on Ross (2001).

The rentier effect: oil rich states tend to get their wealth through direct sales of resources to foreign companies or states, thus reducing the tax burden on the citizens. Low taxes work to reduce the effectiveness of popular demands for representation and accountability (the taxation effect). Moreover, given their wealth, these states can spend quite generous amounts of money on patronage and populist policies (the spending effect) in order to avoid social grievances and demands for greater accountability and popular representation. Finally, oil-rich government may create state-based organizations to counter the development of social groups independent from the state (the group effect).

The repression effect: resource wealth enables the governing elite to boost its internal security, in turn making it more efficient in repressing dissidents. This version of the repression argument sees

the spending as deliberate to make repression more efficient. The discovery and extraction of oil in itself can also trigger unrest which forces the government to spend more on the army in order to repress – here repression is not intended at the outset.

Non-modernization: economic growth caused by oil does not cause the socio-cultural changes normally accompanying economic growth, which in turn are often seen as fundamental in underbuilding democratization. These processes are occupational diversification – by which citizens are specialized and therefore have more economic bargaining power – urbanization, and increasing levels of education which creates a more articulate and politically potent force more able to form an organized opposition. All three factors are seen as crucial in explaining the transition to democracy, and therefore their absence could be seen as an explanation of the lack of democratization.

Most students should know the three different effects. More advanced students will be able to detail the mechanisms of each effect, in particular how the non-modernization argument makes a crucial distinction between wealth – something that resource rich states sometimes have – and socio-cultural development – which is low in resource rich states. The best answers should also bring up the argument that the institutions prior to discovery and extraction can be crucial for subsequent political as well as economic developments.

8. Why do the US wind power installation figures vary so much from year to year?

8. Hvorfor varierer tallene for amerikanske vindkraftinstalleringer så mye fra år til år?

8. Kvifor varierer tala for amerikanske vindkraftinstalleringar så mykje frå år til år?