Правительство Российской Федерации

Федеральное государственное автономное образовательное учреждение высшего профессионального образования "Национальный исследовательский университет "Высшая школа экономики"-Санкт-Петербург

Факультет социологии

Программа дисциплины

«Введение в конструирование моделей в социальных науках (Topics in Social Sciences: A Very Brief Intro to Model Construction)»

Для направления 040100.68 «Социология» подготовки магистра по программе «Современные методы и технологии в изучении социальных проблем общества»
Специализации «Методы сравнительных социальных исследований»

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1. PPROGRAM AUTHOR

Serban Tanasa has Ph.D. in Political Science (University of Michigan), he is Assistant Professor in the Higher School of Economics, St.-Petersburg, Russia.

2. SUMMARY

We all use models all the time, but mostly we do not know or bother to make them very specific. We'll take a look at the advantages of formal models, and then seek to answer the question of why some models succeed in providing a rich, deep description of a relevant aspect of social reality, while others fail miserably. Since all models are by necessity a simplification of reality, it cannot simply be that some models are wrong and some models are right: no one model can be always right.

In the coming weeks, we will look at a few more common social science models. Why are they used over and over again? How do they work ? We will take them apart, try to see what makes them tick, and then put them back together and see what the limits of their applicability are. With luck, this will help us understand the fundamental differences between good, fecund models and poor, uninteresting models.

Prerequisites & Language

There are no prerequisites for this course. The course will be conducted entirely in English, and as such, a certain level of language proficiency is expected. However, I do not expect flawless English, and you should never let a fear of making mistakes stop you from asking a question or making a comment. The more often you interrupt, the happier I am. Seriously. I expect everyone to speak up in class or in the office hours.

3. GRADING

Class Participation	Accounts for 30% of course grade
Homework & Presentation (essay)	Account for 30% of course grade
Final Paper	Accounts for 40% of course grade

Class Participation.
I expect everyone to do the required readings every week, to participate in the discussions of the readings and to create models as part of class exercises. I strongly encourage class participation because it is the best way for you to develop model-making skills. If for some reason you are unable to participate in the standard way, I expect you to turn in 2-4 page essays on the readings instead.

Presentations and Quizzes
Depending on class size, I expect everyone to prepare one or two class presentations of the topic for a given week. These presentations should be run by me before the class meeting time. Additionally, I reserve the right to give unannounced class quizzes on the

relevant material, in any given week. My likelihood of doing so will be directly proportional to my bayesian belief that a majority of the students have not done the required readings.

Final Paper and Presentations

The final paper will be the culmination of your work for this class. I expect you to pick a topic of interest to you, perhaps related to the Master's paper that you will be expected to write. This will not specifically be a research paper, but rather an exercise in serious and rigorous thinking about the topic. Why is your topic a puzzle? How is it interesting and relevant to others? What sort of process/mechanism do you envision (purely descriptive papers will not do)? How will we know if you're wrong? More detailed instructions will be given out later in the class. Everyone will present their papers for public discussion in the last (or perhaps last two) class meetings.

Cumulative part of your grade is based on your regular participation in class discussions, presentations, and attendance.

$$G_{\text{cumulative}} = 0{,}5\, G_{\text{attendance}} + 0{,}5\, G_{\text{presentaions}}$$

The final exam (final paper) will alone account for 40% of the total grade for the course.

$$G_{\text{final}} = 0{,}6\, G_{\text{cumulative}} + 0{,}4\, G_{\text{exam}}$$

Ten-point scale		**Five-point scale**	
1	Complete fail	**2**	Fail
2	Very bad		
3	Fail		
4	Pass	**3**	Pass
5	Pass plus		
6	Good	**4**	Good
7	Very good		
8	Almost excellent	**5**	Excellent
9	Excellent		
10	Distinction		

4. THEMATIC PLAN OF THE COURSE

№	Theme	Total hours in theme	Hours in classroom		Independent Work
			Lecture	Seminar	
1	**Introduction and Orientation**	10	2	2	6
2	**Causal Analysis and Explanation**	12	2	2	8
3	**What Is a Cause? Independence, Screening, Structural Eq., Graphing**	10	2	2	6
4	**Models: Individual Choice**	12	2	2	8
5	**Models of Voting**	10	2	2	6
6	**Inferred Causation: Stability, Markov, Lyapunov functions**	10	2	2	6
7	**Models: Exchange**	12	2	2	8
8	**Models: Adaptation**	10	2	2	6
9	**Models: Diffusion**	12	2	2	8
10	**Showing Instead of Telling: Visual Explanations and Rhetoric**	10	2	2	6
	TOTAL	108	20	20	68

5. CLASS OUTLINE

Since I cannot know the level and interests of the students in advance, this section is for informational purposes only. The actual course schedule will be finalized only after the first class. However, here are some of the topics we will likely be addressing:

Session1. Introduction and Orientation (April 7)

Reading:

IMSS Chapter 1 (pp. 1-7) What we are up to.
"On Exactitude in Science" Jorge Luis Borges, Collected Fictions, translated by Andrew Hurley.

Session2. Causal Analysis and Explanation (April 14)

Reading:

IMSS Chapter 2 (pp. 8-50)

Session 3. What Is a Cause? Independence, Screening, Structural Eq., Graphing (April 21)

Reading:

Sloman, Chapters 2 and 3 (pp. 21-52)
IMSS Chapter 3 (pp. 51- 84)

Session 4. Models: Individual Choice (April 28)

Reading:

IMSS Chapter 4 (pp 85 - 137)

Session 5. Models of Voting (May 12)

Reading:

Making Social Sciences More Scientific, Taalpera, Chapters 3-4. (pp. 22-51)

Session 6. Inferred Causation: Stability, Markov, Lyapunov functions (May 19)

Reading:

Giant Sucking Sound: Lyapunov Functions, Scott Page, 2012, Unpublished Manuscript

Session 7. Models: Exchange (May 26)

Reading:

IMSS Chapter 6 (pp 247 - 300)

Session 8. Models: Adaptation (June 2)

Reading:

IMSS Chapter 7 (pp 341 - 392)

Session 9. Models: Diffusion (June 9)

Reading:

IMSS Chapter 7 (pp 341 - 392)

Session 10. Showing Instead of Telling: Visual Explanations and Rhetoric (June 15)

Reading:

Visual Explanations: Images and Quantities, Evidence and Narrative, Edward Tufte, 1997. Chapter 2: Visual and Statistical Thinking: Displays of Evidence for Making Decisions

6. READINGS

Most readings will be from:

Introduction to Models in Social Sciences, Lave and March, 1973 Causal Models, Sloman 2005

Causality, Models, Reasoning and Inference, Pearl, 2000 Electronic versions of all readings will be provided to the students.

7. ADDITIONALMATERIALS

Model Thinking Class

A course on the same track as the one we're embarking on, but taught by one of my former professors at the University of Michigan in Ann Arbor. The lecture videos and readings are freely available online for now:

https://class.coursera.org/modelthinking/class/index