

**EPPS 7V81**  
**Concepts and Measurement**  
**SPRING 2016**

**Instructor:** Vito D'Orazio

**Time and Location:** Tuesday, 7-9:45pm, SLC 2.202

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**Office Hours:** Tuesday 1:00-2:00pm, Thursday 11:30-12:30pm, GR 3.108D

## Course Goals and Overview

In this course students will learn the fundamentals of social concepts, measurement theory, and sensitivity analysis. We will explore methods and technologies for measuring social concepts, including the construction of scales and typologies, latent traits, and content analysis. For the course project, students will present a new measure of a social concept. This requires students to justify the need to measure the concept on theoretical grounds, to survey the literature for existing measures of the concept, to specify how their measure differs and the logic behind their operationalization, to construct a new measure according to their operational criteria using an appropriate method, and to conduct a sensitivity analysis using the new measure.

There are three learning objectives for this course. The first is to get students to think critically about concepts of interest and the data we use to represent them. The second is to learn techniques for measuring social science concepts. The third is to properly assess the similarities and differences of alternative measures of concepts. These three learning objectives will be assessed through class discussion, the two short papers, and the final project.

## Course Requirements

For each class, be prepared to discuss the week's readings and to extend the discussion to particular areas of interest.

Each Monday prior to class, submit your weekly assignment through eLearning. The assignment should be one-two pages, and consist of two thoughtful questions and a response to the week's readings. The questions will be used to trigger class discussion. I am open as to the type of response you wish to write. However, I am adamant that these responses are not summaries. For example, you may synthesize the readings, propose an idea different from the author's, discuss an alternative measure or measurement technique, criticize the theory or design, or even answer your own question. On dates when the short papers are due, you need only submit the two thoughtful questions, not the full response.

## Final Grade Composition

Short Papers and presentations	40%
Final Project	40%
Attendance and participation	20%

### Attendance and participation (20%)

Submit the weekly assignments on time, show up, be attentive, and participate to get full credit. I expect all students to engage in discussion every class. The purpose is not only to demonstrate that you have read, but also that you have thought critically about the readings.

### Short Papers (30%) and Presentations (10%)

Short paper 1 introduces the concept that the student will be measuring for her or his final paper. Survey the literature, choose and critique an existing measure, and describe an alternative operationalization of the concept.

Short paper 2 discusses the ideal method of measuring the alternative operationalization of the concept. Students must also propose a practical method for measuring the concept within the timeframe of this course.

Each of the short papers will be accompanied by a presentation during class. While the papers will be due on the same date for every student, we will only cover about three presentations per class. Thus, there will be about six classes that include short paper presentations. During these classes, presentations will account for one hour of class time.

### Final Project (40%)

The final project consists of both a presentation (15%) and a paper (25%). We will be developing these papers and ideas throughout the semester through the short papers and class discussion.

For the final project, students will write and present a paper that is suitable for a conference presentation. Propose and defend a new measure of some concept of interest. Then, construct the new measure and conduct a sensitivity analysis comparing the new measure to an existing operationalization of the concept. Be sure to explicitly recognize and justify your assumptions.

### Grade Scale

A+	≥ 97%	B	= 83-86%	C-	70-72%
A	= 93-96%	B-	= 80-82%	D	65-69%
A-	= 90-92%	C+	= 77-79%	F	≤ 64%
B+	= 87-89%	C	= 73-76%		

See <http://catalog.utdallas.edu/2015/graduate/policies> for additional information about university grading policies.

## UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus: <http://go.utdallas.edu/syllabus-policies>.

### Required Texts

Note that [De Ayala, 2013] and [Goertz and Mahoney, 2012] are available electronically from the UTD library. [Collier and Gerring, 2009] is available as well, but not electronically.

- Collier, D. and Gerring, J., editors (2009). *Concepts and method in social science: the tradition of Giovanni Sartori*. Routledge, New York
- De Ayala, R. J. (2013). *Theory and practice of item response theory*. Guilford Publications
- Goertz, G. and Mahoney, J. (2012). *A tale of two cultures: Qualitative and quantitative research in the social sciences*. Princeton University Press

### Additional Texts

These are useful texts, some of which we will be reading from. All readings from these texts will be made available, so you are not required to purchase them.

- Zeller, R. A. and Carmines, E. G. (1980). *Measurement in the Social Sciences: The Link Between Theory and Data*. Cambridge University Press, New York
- Saltelli, A., Ratto, M., Andres, T., Campolongo, F., Cariboni, J., Gatelli, D., Saisana, M., and Tarantola, S. (2008). *Global sensitivity analysis: the primer*. John Wiley & Sons
- Ragin, C. C. (2000). *Fuzzy-set social science*. University of Chicago Press
- Koski, T. and Noble, J. (2011). *Bayesian networks: an introduction*, volume 924. John Wiley & Sons
- Box-Steffensmeier, J. M., Brady, H. E., and Collier, D., editors (2008). *The Oxford Handbook of Political Methodology*. Oxford University Press, Oxford
- Ragin, C. C. (2008b). *Redesigning social inquiry: Fuzzy sets and beyond*. Wiley Online Library

# Course Outline

## Part I – Concepts

### Day 1: Importance of Concepts and Measurement

January 12

- Mahoney, J. and Goertz, G. (2006). A tale of two cultures: Contrasting quantitative and qualitative research. *Political Analysis*, 14(3):227–249
- Mearsheimer, J. J. and Walt, S. M. (2013). Leaving theory behind: Why simplistic hypothesis testing is bad for international relations. *European Journal of International Relations*, 19(3):427–457
- Schrodtt, P. A. (2014). Seven deadly sins of contemporary quantitative political analysis. *Journal of Peace Research*, 51(2):287–300
- Boyd, D. and Crawford, K. (2012). Critical questions for big data: Provocations for a cultural, technological, and scholarly phenomenon. *Information, communication & society*, 15(5):662–679
- Lazer, D., Kennedy, R., King, G., and Vespignani, A. (2014). The parable of google flu: traps in big data analysis. *Science*, 343(14 March)

### Day 2: Concepts and Validity

January 19

- Sartori, G. (2009b). concept misinformation in comparative politics. In Collier, D. and Gerring, J., editors, *Concepts and method in social science: the tradition of Giovanni Sartori*, chapter 1, pages 13–43. Routledge, New York
- Sartori, G. (2009a). Comparing and miscomparing. In Collier, D. and Gerring, J., editors, *Concepts and method in social science: the tradition of Giovanni Sartori*, chapter 5, pages 151–164. Routledge, New York
- Adcock, R. and Collier, D. (2001). Measurement validity: A shared standard for qualitative and quantitative research. *American Political Science Review*, 95(3):529–546
- Borsboom, D., Mellenbergh, G. J., and van Heerden, J. (2004). The concept of validity. *Psychological review*, 111(4):1061

### Day 3: Conceptual Stretching

January 26

- Goertz, G. (2009). Point of departure: Intension and extension. In Collier, D. and Gerring, J., editors, *Concepts and method in social science: the tradition of Giovanni Sartori*, chapter 7, pages 181–202. Routledge, New York
- Collier, D. and Mahon, J. E. (1993). Conceptual stretching revisited: Adapting categories in comparative analysis. *American Political Science Review*, 87(04):845–855

- Coppedge, M., Lindberg, S., Skaaning, S.-E., and Teorell, J. (2015). Measuring high level democratic principles using the v-dem data. *International Political Science Review*, (ahead-of-print):1–14
- Collier, D. and Levitsky, S. (2009). Democracy: Conceptual hierarchies in comparative research. In Collier, D. and Gerring, J., editors, *Concepts and method in social science: the tradition of Giovanni Sartori*, chapter 10, pages 269–288. Routledge, New York
- Coppedge, M., Gerring, J., Altman, D., Bernhard, M., Fish, S., Hicken, A., Kroenig, M., Lindberg, S. I., McMann, K., Paxton, P., Semetko, H. A., Skaaning, S.-E., Staton, J., and Teorell, J. (2011). Conceptualizing and measuring democracy: A new approach. *Perspectives on Politics*, 9(02):247–267

### Additional Readings

- Kurtz, M. J. (2009). Peasant: Clarifying meaning and refining explanation. In Collier, D. and Gerring, J., editors, *Concepts and method in social science: the tradition of Giovanni Sartori*, chapter 11, pages 289–314. Routledge, New York
- Goertz, G. (2006). Assessing the trivialness, relevance, and relative importance of necessary or sufficient conditions in social science. *Studies in Comparative International Development*, 41(2):88–109

### Day 4: Fuzzy Sets

February 2

- Ragin, C. C. (2008a). Measurement versus calibration: A set-theoretic approach. In Box-Steffensmeier, J. M., Brady, H. E., and Collier, D., editors, *The Oxford Handbook of Political Methodology*, chapter 8, pages 174–198. Oxford University Press, Oxford
- Goertz, G. and Mahoney, J. (2012). *A tale of two cultures: Qualitative and quantitative research in the social sciences*. Princeton University Press. Chapter 2, 11
- Kotowski, C. (2009). Revolution: Untangling alternative meanings. In Collier, D. and Gerring, J., editors, *Concepts and method in social science: the tradition of Giovanni Sartori*, chapter 8, pages 203–240. Routledge, New York
- Sambanis, N. (2004). What is civil war? conceptual and empirical complexities of an operational definition. *Journal of conflict resolution*, 48(6):814–858
- Stokke, O. S. (2007). Qualitative comparative analysis, shaming, and international regime effectiveness. *Journal of Business Research*, 60(5):501–511

### Additional Readings

- Greckhamer, T., Misangyi, V. F., and Fiss, P. C. (2013). The two qcas: From a small-n to a large-n set theoretic approach. *Configurational theory and methods in organizational research*, 38:49–75

- Rihoux, B. (2008). Case-oriented configurational research: Qualitative comparative analysis (qca), fuzzy sets, and related techniques. In Box-Steffensmeier, J. M., Brady, H. E., and Collier, D., editors, *The Oxford Handbook of Political Methodology*, chapter 31, pages 722–736. Oxford University Press, Oxford
- Thiem, A. (2014). Membership function sensitivity of descriptive statistics in fuzzy-set relations. *International Journal of Social Research Methodology*, 17(6):625–642

### Day 5: Concepts and (A)symmetry

February 9

- Goertz, G. (2008). Concepts, theories, and numbers: A checklist for constructing, evaluating, and using concepts or quantitative measures. In Box-Steffensmeier, J. M., Brady, H. E., and Collier, D., editors, *The Oxford Handbook of Political Methodology*, chapter 5, pages 97–118. Oxford University Press, Oxford
- Goertz, G. and Mahoney, J. (2012). *A tale of two cultures: Qualitative and quantitative research in the social sciences*. Princeton University Press. Chapters 5, 13
- Plümpert, T. and Neumayer, E. (2010). The level of democracy during interregnum periods: Recoding the polity2 score. *Political analysis*, 18(2):206–226
- Klein, J. P., Goertz, G., and Diehl, P. F. (2008). The peace scale: Conceptualizing and operationalizing non-rivalry and peace. *Conflict Management and Peace Science*, 25(1):67–80

### Additional Readings

- Vreeland, J. R. (2008). The effect of political regime on civil war unpacking anocracy. *Journal of Conflict Resolution*, 52(3):401–425
- Diehl, Paul. 2016. Exploring Peace: Looking Beyond War and Negative Peace. *International Studies Quarterly*, forthcoming.

## Part II – Measurement

### Day 6: Traditional Data Collection

February 16

- Short paper 1 is due
- D’Orazio, V., Landis, S. T., Palmer, G., and Schrodtt, P. (2014). Separating the wheat from the chaff: Applications of automated document classification using support vector machines. *Political Analysis*, 22(2):224–242
- D’Orazio, V., Kenwick, M., Lane, M., Palmer, G., and Reitter, D. (2016). Crowdsourcing the measurement of interstate conflict data. *PLOS ONE*, forthcoming
- Salehyan, I., Hendrix, C. S., Hamner, J., Case, C., Linebarger, C., Stull, E., and Williams, J. (2012). Social conflict in africa: A new database. *International Interactions*, 38(4):503–511

- Hendrix, C. S. and Salehyan, I. (2015). No news is good news: Mark and recapture for event data when reporting probabilities are less than one. *International Interactions*, (ahead-of-print):1–15
- Salehyan, I. and Hendrix, C. (2011). *Social Conflict in Africa Database: Codebook and Coding Procedures*

## Additional Readings

- Salehyan, I. (2015). Best practices in the collection of conflict data. *Journal of Peace Research*, 52(1):105–109

### Day 7: Typologies

February 23

- Collier, D., Laporte, J., and Seawright, J. (2008). Typologies: Forming concepts and creating categorical variables. In Box-Steffensmeier, J. M., Brady, H. E., and Collier, D., editors, *The Oxford Handbook of Political Methodology*, chapter 7, pages 152–173. Oxford University Press, Oxford
- Collier, D., LaPorte, J., and Seawright, J. (2012). Putting typologies to work concept formation, measurement, and analytic rigor. *Political Research Quarterly*, 65(1):217–232
- Gerring, J. and Barresi, P. A. (2009). Culture: Joining minimal definitions and ideal types. In Collier, D. and Gerring, J., editors, *Concepts and method in social science: the tradition of Giovanni Sartori*, chapter 9, pages 241–268. Routledge, New York
- Ahlquist, J. S. and Breunig, C. (2012). Model-based clustering and typologies in the social sciences. *Political Analysis*, 20(1):92–112
- Dunlop, C. A. and Radaelli, C. M. (2013). Systematising policy learning: from monolith to dimensions. *Political studies*, 61(3):599–619
- Vabulas, F. and Snidal, D. (2013). Organization without delegation: Informal intergovernmental organizations (iigos) and the spectrum of intergovernmental arrangements. *The Review of International Organizations*, 8(2):193–220

### Day 8: Measurement and Missing Data

March 1

- Jackman, S. (2008). Measurement. In Box-Steffensmeier, J. M., Brady, H. E., and Collier, D., editors, *The Oxford Handbook of Political Methodology*, chapter 6, pages 119–151. Oxford University Press, Oxford
- Bollen, K. and Lennox, R. (1991). Conventional wisdom on measurement: A structural equation perspective. *Psychological bulletin*, 110(2):305
- Hand, D. J. (1996). Statistics and the theory of measurement. *Journal of the Royal Statistical Society. Series A (Statistics in Society)*, pages 445–492

- Blackwell, M., Honaker, J., and King, G. (2015). A unified approach to measurement error and missing data: Overview and applications. *Sociological Methods & Research*, Forthcoming:1–39
- Honaker, J. and King, G. (2010). What to do about missing values in time-series cross-section data. *American Journal of Political Science*, 54(2):561–581

**Day 9: Scaling and Content Analysis****March 8**

- Benoit, K., Conway, D., Lauderdale, B. E., Laver, M., and Mikhaylov, S. (2015). Crowd-sourced text analysis. *American Political Science Review*, forthcoming
- Slapin, J. B. and Proksch, S.-O. (2008). A scaling model for estimating time-series party positions from texts. *American Journal of Political Science*, 52(3):705–722
- Van Schuur, W. H. (2003). Mokken scale analysis: between the guttman scale and parametric item response theory. *Political Analysis*, pages 139–163
- Gerring, J., Pemstein, D., and Skaaning, S.-E. (2015). An ordinal, concept-driven approach to measurement: The lexical scale. <http://blogs.bu.edu/jgerring/files/2015/08/Text-15-08-07.pdf>
- Schmidtlein, M. C., Deutsch, R. C., Piegorsch, W. W., and Cutter, S. L. (2008). A sensitivity analysis of the social vulnerability index. *Risk Analysis*, 28(4):1099–1114

**Day 10: IRT: One-Parameter and Estimation****March 22**

- Short paper 2 is due
- De Ayala, R. J. (2013). *Theory and practice of item response theory*. Guilford Publications. Chapters 1, 2, 3
- Bollen, K. A. (2002). Latent variables in psychology and the social sciences. *Annual review of psychology*, 53(1):605–634
- Blei, D. M. (2014). Build, compute, critique, repeat: Data analysis with latent variable models. *Annual Review of Statistics and Its Application*, 1:203–232

**Additional Readings**

- Borsboom, D., Mellenbergh, G. J., and Van Heerden, J. (2003). The theoretical status of latent variables. *Psychological review*, 110(2):203

**Day 11: IRT: Two and Three-Parameter Models****March 29**

- De Ayala, R. J. (2013). *Theory and practice of item response theory*. Guilford Publications. Chapters 5, 6



- Carroll, R., Lewis, J. B., Lo, J., Poole, K. T., and Rosenthal, H. (2009). Comparing nominate and ideal: Points of difference and monte carlo tests. *Legislative Studies Quarterly*, 24(4):555–591
- Clinton, J. D. and Jackman, S. (2009). To simulate or nominate? *Legislative Studies Quarterly*, 24(4):593–621

**Day 12: IRT: Ordered Response Data****April 5**

- De Ayala, R. J. (2013). *Theory and practice of item response theory*. Guilford Publications. Chapters 7, 8
- Treier, S. and Jackman, S. (2008). Democracy as a latent variable. *American Journal of Political Science*, 52(1):201–217
- Pemstein, D., Meserve, S. A., and Melton, J. (2010). Democratic compromise: A latent variable analysis of ten measures of regime type. *Political Analysis*, 18(4):426–449

**Day 13: Sensitivity Analysis****April 12**

- Leamer, E. E. (1983). Let's take the con out of econometrics. *The American Economic Review*, 73(1):31–43
- Leamer, E. E. (1985). Sensitivity analyses would help. *The American Economic Review*, 75(3):308–313
- Each students finds and reads two additional articles that conduct a sensitivity analyses in their area of interest

**Additional Readings**

- Durham, J. B. (2004). Economic growth and institutions: some sensitivity analyses, 1961–2000. *International Organization*, 58(03):485–529
- Sturm, J.-E., Berger, H., and De Haan, J. (2005). Which variables explain decisions on imf credit? an extreme bounds analysis. *Economics & Politics*, 17(2):177–213
- Chakrabarti, A. (2001). The determinants of foreign direct investments: Sensitivity analyses of cross-country regressions. *Kyklos*, 54(1):89–114

**Day 14: Goertz Visit and Autocratic Regimes****April 19**

- Gary Goertz will present on typologies
- Prepare discussion questions for an open-ended, round table discussion with Gary. These questions may cover any aspect of this course.
- Geddes, B., Wright, J., and Frantz, E. (2014). Autocratic breakdown and regime transitions: A new data set. *Perspectives on Politics*, 12(02):313–331

- Wright, J., Honaker, J., and Geddes, B. (2014). The latent characteristics that structure autocratic rule. In *APSA 2014 Annual Meeting Paper*. <http://hona.kr/papers/files/GeddesHonakerWright14.pdf>
- Wilson, M. C. (2014). A discreet critique of discrete regime type data. *Comparative Political Studies*, 47(5):689–714

**Day 15: Final Presentations****April 26**

- Final presentations

**Final papers are to be submitted no later than May 1.**