POLI 4395:
Political Science Capstone Course
Section 110 (Spring 2018)
6 PM – 9 PM Tues / FH 212

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Catalog Description

Integrate and use fundamental concepts learned in previous political science courses to research and analyze real-world political phenomena and problems. Students present oral and written reports on their research, supplemented by appropriate internet and multimedia materials, as well as portfolios documenting their research.

Course Objectives and Learning Outcomes

This course is intended to unify the study of different subfields of political science – American politics, comparative politics, international relations, and normative political theory – by training students in the methods of formal political analysis, focusing on models of rational choice. These models include:

- Decision theory (including expected utility theory and its competitors)
- Game theory (and other formal models of bargaining and strategic interaction)
- Spatial models of politics (including the median and mean voter theorems)
- Collective social choice theory (including Arrow's Theorem and the collective action dilemma)

The central learning objectives for this course are:

1. Students will be able to describe, critique, and solve models of political decisionmaking using rational choice theory.
2. Students will be able to identify common elements of formal models when presented with new theories in political science.
3. Students will learn to identify, apply (make a prediction in a particular case), and critique the empirical and normative assumptions of each of the formal models of political choice listed above.
4. Students will improve writing proficiency through a process of continuous revision and addition as the research portfolio progresses.

Learning Outcome 1 is assessed using the homework and final exam. Learning Outcome 2 is assessed using the literature review section of the required research portfolio. Learning Outcome 3 is assessed using in-class participation and the rest of the research portfolio. Learning Outcome 4 is assessed using the research portfolio.

Writing-Intensive Course Requirements

This is a writing-intensive course. That means that one objective of the course is to improve student writing. In concrete terms, this means engaging in a process of continuous revision and resubmission of drafts. Grammar and spelling errors will reduce the credit you receive, even for otherwise correct answers. See Canvas for a link to my pet grammatical peeves.

Of course, good writing requires more than correct spelling and grammar, and in longer pieces I'm looking for a thesis, for paragraphs to have topic sentences, and for well-cited and evidence-based argumentation. An argument is complete if it contains a claim (something you are trying to prove), evidence (properly-cited, of course), and a warrant (the evidence logically supports the claim). The citation system we'll be using in this class is that of the American Political Science Association (APSA), which is a slightly modified form of the parenthetical documentation system in the Chicago Manual of Style (not the note system found in the same volume). A guide to APSA citations is available on Canvas.

Course Format

This course meets face-to-face, with supplemental materials made available online through the Texas A&M-Central Texas Canvas Learning Management System [https://tamuct.instructure.com].

Required Readings

The following three books are required for this course. The other required readings are on Canvas. Note that a student is under no obligation to purchase textbooks from the university bookstore. Other sources, including online retailers, may offer lower prices. Do pay careful attention to delivery dates so that you have each book on time.

Macartan Humphreys. 2017. Political Games: Mathematical Insights on Fighting, Lying & Other Affairs of State. NY: W.W. Norton. ISBN-13: 978-0393263336

William Spaniel. 2014. Game Theory 101: Bargaining. Charleston, NC: CreateSpace. ISBN: 978-1503016972

William Spaniel. 2015. Game Theory 101: The Complete Textbook. 2014-2015 Edition. Charleston, NC: CreateSpace. ISBN: 978-1492728153

Technology Requirements and Support

This course will use the Texas A&M-Central Texas Instructure Canvas learning management system for course readings (posted in Adobe pdf format, which can be opened by Adobe Reader and most modern web browsers), the Academic Integrity Exercise, an Excel survey exercise, and PowerPoint slides. Note that Excel and PowerPoint are both available on all university computers.

- Logon to Texas A&M-Central Texas Canvas [https://tamuct.instructure.com].
  Username: Your MyCT username (xx123 or everything before the "@" in your MyCT email address)
  Password: Your MyCT password

- *For log-in problems*, students should contact Help Desk Central -- 24 hours a day, 7 days a week:
  Email: helpdesk@tamu.edu
  Phone: (254) 519-5466
  Web Chat: [http://hdc.tamu.edu]
  Please let the support technician know you are an A&M-Central Texas student.
- For issues with Canvas, select "chat with Canvas support," submit a support request to Canvas Tier 1, or call the Canvas support line: 1-844-757-0953, links to all are found inside of Canvas using the "Help" link.
- For issues related to course content and requirements, contact your instructor.

Grading (90/80/70/60, rounded to the nearest percentage)

- Academic Integrity Exercise: This consists of watching a brief lecture, taking a quiz, seeing where any mistakes on the quiz came from, and signing a statement. Once you successfully complete this exercise, you will no longer need to do so in future political science courses.

  ****Completing the Academic Integrity Exercise is a prerequisite to passing this course. It must be completed before you hand in any homework or **the due date on the course calendar**, whichever comes first.****

  - *Rubric:* **If you have never taken the exercise, you will automatically fail the course if you have not completed the Academic Integrity exercise on or before the due date.** Students who have previously completed the academic integrity exercise in another one of my courses do not need to repeat it for this course.

- Worksheets (18%). These can be found at the end of the syllabus; they are graded on a check system:
  - If the student completes the worksheet and shows his/her work properly, then the student gets full credit, even if his/her final answers happen to be incorrect.
  - If the student fails to complete part of the exercise or show his/her work, then the student gets a check-minus (half credit).
  - If the student fails to complete even half of the work assigned, the student gets an X (zero credit).

- Participation (18%). This will be graded using a simple system. A student who attends and does little else will receive 5 points. A student who constructively participates in about half of the class will receive 10 points. A student who constructively participates throughout class will receive the full 15 points.
  - Constructive participation means making comments or asking questions that demonstrate familiarity with the assigned readings for the week. It also means actively engaging in any in-class exercises.

- As the amount of class time devoted to lecture increases, the amount of participation expected from students decreases proportionally. A good rule of thumb is to be sure to contribute something relevant (even just a question that shows engagement with the course material) at least twice an hour if there is no lecture or in-class exercise.

- Final Exam (25%). The final exam will be five pairs of problems that parallel to those of the homework and in-class exercises. Students will receive the higher of the two scores for each problem. Students may use the assigned readings, any materials they have personally prepared, and course handouts on the exam.
  - The grade for each question is evenly divided between whether the student followed the correct method for solving the problem and whether the student actually identified the correct solution to the problem.

- Course portfolio (34%). The centerpiece of the course is a portfolio in which students will apply a formal model of politics to answer a puzzle in political science. Note that a full research portfolio consists of a literature review, a theory, hypotheses derived from the theory, a research design, and the results of the research. The portfolio in this course requires only the first three, but requires them to be developed to near-publication quality through a process of discussion and revision. There are several milestones that must be met:
  - Draft 1. *Puzzle, Question, and Article Review*. This is a brief draft focusing on your puzzle (see Appendix A for some ideas), its practical *and* disciplinary importance, and at least one journal article or scholarly book that addresses the puzzle using a formal model. Follow these steps to construct this initial draft (worth 25 points):
    - Create a cover page. Come up with a title other than "POLI 4395 Draft" or the like (you may want to save this part for last, since you may not know your thesis yet); add your name and institutional affiliation (presumably, Texas A&M University – Central Texas). [2 points]
    - Begin the draft by offering a puzzle in politics; then establish your research question and its importance for both political life and political science. This should take a paragraph or two. [6 points]
    - Then provide a thesis about where the solution to the puzzle may lie. Incorporate strategic interaction between political actors in your explanation.
    - Now discuss an article from an academic journal, a thesis or dissertation, or an academic/scholarly book that used a formal (mathematical) model to address part of all of your puzzle. Describe its dependent variable, its theoretical approach (answer) to the question, its research design, and the author's conclusions. Conclude your discussion of the article by examining the weaknesses of the author's approach (especially the formal model itself, to the extent that you can figure out what assumptions it makes) and what knowledge we gain from the study (if any). [15 points]
    - Attach a works cited page in APSA format. [2 points]
    - Note that one point will be deducted for every two spelling/grammar errors in this draft, so be sure to proofread.

- Draft 2. *Literature Review*. The literature review should revise the first draft in accordance with comments received and substantially expand the portfolio from a discussion of one article's approach and findings to a discussion of five such pieces of academic literature and their approaches to the puzzle. Describe and critique the theories and results of at least five peer-reviewed articles, dissertations/theses, or research monographs from scholarly presses (or all of them, if five such sources do not exist – which is the student's burden to prove). Meeting this milestone is worth up to 50 points, depending on the quality of the work.
    - Failure to clearly identify the question will result in the deduction of half of the points which the portfolio would otherwise have earned.
    - For every one source fewer than five, ten points will be deducted. The exception is if the student demonstrates to the satisfaction of the instructor that all work relevant to the question has been reviewed.
        - No more than two assigned readings from class can count towards the five-source minimum.
        - For each source which does not meet the academic criteria for inclusion, up to ten points will be deducted, depending on how distant the source is from original scholarly research (for example, other literature reviews or academic textbooks are worth only 60% credit while encyclopedias are worth only 20% credit).
        - Each source discussed must clearly relate to the question. If the relationship is unclear, up to five points may be deducted.
    - For every two spelling/grammar errors, one point will be deducted.
- Draft 3. *Revision and Model Development.* The student must revise the question and literature review of the portfolio in accordance with criticism of that work. In addition, the student must now add a formal model that addresses the issue. The model should be fully specified – its assumptions and definitions should be clear, as should its structure. Meeting this milestone is worth up to 70 points, depending on the quality of the work.
    - The question and literature review are worth 20 points. You will receive these points in proportion to the amount of required revision that was made in this draft. In other words, simply tacking the old literature review (without revisions) onto the new draft will result in the loss of 20 points.
    - Clearly stating the attributes of the formal model (e.g. a game, an expected utility model, an evolutionary model, etc) is worth 10 points.
    - Defining the non-standard terms in the model and listing its non-standard assumptions are worth 10 points. A non-standard term or assumption is something not already embedded in the generic class of model. For example, a game-theoretic model of deterrence need not define terms such as strategy, node, or Nash Equilibrium – these are part of game theory, and anyone who understands game theory already knows what they mean. However, the term "deterrence" would need to be defined, and any assumptions about players' preferences would need to be clearly stated.

        - Having a complete structure to the model, so that someone with sufficient skill could use it to deduce hypotheses, is worth 20 points.
        - Justifying the attributes, each non-standard definition or assumption, and the structure of the model are collectively worth 10 points.
        - For every spelling/grammar error, one point will be deducted.
    - Draft 4. *Revision and Hypothesis Generation.* The student must revise the earlier sections of the portfolio in accordance with criticism of that work. In addition, the student must solve the model and prove that it leads to at least three testable hypotheses. Meeting this milestone is worth up to 75 points, depending on the quality of the work.
        - Revisions to earlier sections of the portfolio are worth 30 points. Failure to revise will result in a 30-point deduction, while full revision in accordance with all critiques will result in no deduction.
        - The solution to the model is worth 30 points. Students must show their work (possibly in an appendix, if it disrupts the flow of the portfolio).
        - Each testable hypothesis is worth five points.
        - For every spelling/grammar error, one point will be deducted.
    - Final Draft. The student must revise the earlier sections of the portfolio in accordance with criticism of that work and complete the process of generating a self-contained formal model. The final product is worth 125 points.
        - Revisions to earlier sections of the portfolio are worth 75 points. Failure to revise will result in a 75-point deduction, while full revision in accordance with all critiques will result in no deduction.
        - The remainder of the credit is based on formatting and two (possibly new) additions which were not previously graded:
            - The portfolio requires a brief abstract (100 words is ideal) which identifies the problem, briefly describes the model, and identifies its most interesting predictions. (20 points)
            - The portfolio also requires a brief section at the end which details why its hypotheses, if true, are important for scholars in the field. (30 points)
        - For every spelling/grammar or formatting error, two points will be deducted.
- Research Presentation (5%). Prepare a 7-12 minute summary of your puzzle, model, and most interesting hypotheses. Do not use a script, although notes are fine. Some prepared visual aid (a handout for everyone in the class and the instructor, a PowerPoint presentation, etc) is required. You will be graded on preparation, professionalism, content, and how you address questions about your work from other students or the instructor. (Your own questions of the other presenters form the participation grade for this portion of the session).
    - Rubric: You will be scored on these criteria.
    - Preparation (structure, notes, use of visual aids): 0 2 4 6 8 10 12
    - Professionalism (dress, conduct, language): 0 2 4 6 8 10 12
    - Content (puzzle, model, most interesting hypotheses) : 0 2 4 6 8 10 12
    - Question handling: 0 2 4 6 8 10 12
    - Over/under time limits: -1 per minute over/under
    - TOTAL = 2 +_____ = _____ /50

POLI 4395 Course Rubric

Item	Points	Percent
Worksheets (12)	15 each – 180 total	18%
Participation	15 per session – 180 total	18%
Course Portfolio	340	34%
Research Presentation	50	5%
Final Exam	250	25%
TOTAL POSSIBLE	**1000**	**100%**
895+ = A 795-894=B 695-794=C 595-694=D 594 or lower = F		

Regrade Policy

It is possible for me to make a mistake when grading. So if you think that I graded part or all of an assignment incorrectly, you have one week to return it to me for regrading against the rubric. You may request that all or only part of the assignment be regraded. I take no offense at this. The same policy applies to the final exam; you have one week from when grades are posted to request a regrade of one or both questions.

Attendance, Make-Up Work, Late Work, and Incompletes

- Attendance is required. Students must inform the instructor *prior to an absence*. Send me an email stating the dates(s) you will be missing and the reason(s). (Protect yourself! Don't rely on my memory – send me something written that I can keep in my files).
    - If all else fails, you or a friend may call my office and speak to me or my voicemail. There are very few situations in life that preclude making a phone call or having a friend do so; failure to contact the instructor *prior to class* will normally rule out any sort of make-up.
    - If you have to leave early, please remember to get the assignment first.
- Make-up work is required for any excused absence after the first. It makes up for the inability of the student to participate in the class. Note that this is in addition to completing the exercises for the missed week – the two are graded separately. **When you return from a second or subsequent excused absence, be sure to request the make-up work. It is your duty to ask, not the instructor's duty to remind you.**
- Late exercises are only accepted in the case of extended excused absences such that a student could not complete the exercises during any day of the week. Because of the nature of the exercises and how we cover them in class, you cannot turn them in after class, even if it's still the same night.
- If any portion of the portfolio is late, there is a 10%/day penalty for that portion of the portfolio. This is computed as a fraction of credit earned, so that three days late = 30% penalty = student receives 70% of credit which he/she would otherwise have earned.
- Grades of incomplete are not to be used when students simply fall behind. Instead, they are used when some event such as a hospitalization or deployment effectively takes the student out of the class after the drop deadline. By university policy, incompletes must be finished in the subsequent semester.

Academic Integrity

University Code of Academic Honesty: Texas A&M University -Central Texas values the integrity of the academic enterprise and strives for the highest standards of academic conduct. A&M-Central Texas expects its students, faculty, and staff to support the adherence to high standards of personal and scholarly conduct to preserve the honor and integrity of the creative community. Academic integrity is defined as a commitment to honesty, trust, fairness, respect, and responsibility. Any deviation by students from this expectation may result in a failing grade for the assignment and potentially a failing grade for the course. Academic misconduct is any act that improperly affects a true and honest evaluation of a student's academic performance and includes, but is not limited to, cheating on an examination or other academic work, plagiarism and improper citation of sources, using another student's work, collusion, and the abuse of resource materials. All academic misconduct concerns will be reported to the university's Office of Student Conduct. Ignorance of the university's standards and expectations is never an excuse to act with a lack of integrity. When in doubt on collaboration, citation, or any issue, please contact your instructor before taking a course of action.

Specific guidelines for this course, which supplement and do not replace University policy:

- *Violations:* There are plenty of ways to cheat, all of which are listed by the Student Handbook. Some common violations of academic integrity that I have observed while teaching similar classes at TAMUCT are
    - Copying another student's homework. This class is unusual in that I encourage study groups, but copying must be avoided. Discuss the readings as long as you wish, but don't "share" your answers to the homework. You may not "jointly" complete any of the homework exercises in this course unless otherwise indicated on the assignment; these are to be completed by yourself alone. If you provide another student with a copy of your homework and they copy it, both you and the copier will be deemed to have violated the policy.
    - Using direct quotes without quotation marks. Even if you are just using three- or four-word phrases, you need to surround them with quotation marks if you didn't create them yourself. This is true even if you cite the source! Remember that changing a few words in a sentence does not transform a direct quote into a paraphrase; instead, it transforms one long direct quote into several shorter direct quotes with a word of your own between each. A true paraphrase is the expression of the cited source's ideas in your own words.
    - Paraphrasing another person's words without citing the source
    - Listing or citing sources in a research portfolio which were not actually consulted by the student.
- *Penalties:*
    - The normal penalty for a violation of academic integrity (whether or not it is specifically listed above) in any of my classes is a grade of zero for the work or a deduction of 20% (two letter grades) from your course grade, whichever is **greater**. The infraction will be reported to the TAMUCT administration, with a recommendation for probation in the case of deliberate violation or no further action in the case of clearly inadvertent violation.
    - The (a) outright purchase, download, or completion by others of an exam, or (b) second or subsequent violation of academic integrity (in this course or other courses) display such

serious disregard for academic integrity that either one of them will result in course failure **and** recommendation for expulsion to the TAMUCT administration.

Drop Policy

If you discover that you need to drop this class, you must complete a Drop Request Form [https://www.tamuct.edu/registrar/docs/Drop_Request_Form.pdf].

Professors cannot drop students; this is always the responsibility of the student. The Registrar's Office will provide a deadline on the Academic Calendar for which the form must be completed, signed and returned. Once you return the signed form to the Registrar's Office, you must go into Warrior Web and confirm that you are no longer enrolled. If you still show as enrolled, FOLLOW-UP with the Registrar's Office immediately. You are to attend class until the procedure is complete to avoid penalty for absence. Should you miss the drop deadline or fail to follow the procedure, you will receive an F in the course, which may affect your financial aid and/or VA educational benefits.

Student Resources

- **911 Cellular:** Emergency Warning System for Texas A&M University – Central Texas**.** 911Cellular is an emergency notification service that gives Texas A&M University-Central Texas the ability to communicate health and safety emergency information quickly via email, text message, and social media. All students are automatically enrolled in 911 Cellular through their myCT email account. Connect at 911Cellular [https://portal.publicsafetycloud.net/Texas-AM-Central/alert-management] to change where you receive your alerts or to opt out. By staying enrolled in 911Cellular, university officials can quickly pass on safety-related information, regardless of your location.
- **Academic Accommodations**: At Texas A&M University-Central Texas, we value an inclusive learning environment where every student has an equal chance to succeed and has the right to a barrier free education. The Department of Access and Inclusion is responsible for ensuring that students with a disability receive equal access to the University's programs, services and activities. If you believe you have a disability requiring reasonable accommodations, please contact the Department of Access and Inclusion at (254) 501-5831. Any information you provide is private and confidential and will be treated as such.For more information please visit our Access & Inclusion webpage [https://www.tamuct.edu/student-affairs/access-inclusion.html].
    - Texas A&M University-Central Texas supports students who are pregnant and/or parenting. In accordance with requirements of Title IX and guidance from US Department of Education's Office of Civil Rights, the Dean of Student Affairs' Office can assist students who are pregnant and/or parenting in seeking accommodations related to pregnancy and/or parenting. For more information, please visit https://www.tamuct.departments/index.php. Students may also contact the institution's Title IX Coordinator. If you would like to read more about these requirements and guidelines online, please visit the website [http://www2.ed.gov/about/offices/list/ocr/docs/pregnancy.pdf].
    - Title IX of the Education Amendments Act of 1972 prohibits discrimination on the basis of sex and gender – including pregnancy, parenting, and all related conditions. A&M-

Central Texas is able to provide flexible and individualized reasonable accommodation to pregnant and parenting students. All pregnant and parenting students should contact the Division of Student Affairs at 254-501-5909 to seek out assistance. Students may also contact the University's Title IX Coordinator.

- **Tutoring** is available to all A&M-Central Texas students, both on-campus and online. On-campus subjects tutored include Accounting, Advanced Math, Biology, Finance, Statistics, Mathematics, and Study Skills. Tutors are available at the Tutoring Center in Warrior Hall, Suite 111.
    - If you have a question regarding tutor schedules, need to schedule a tutoring session, are interested in becoming a tutor, or any other question, contact Academic Support Programs at 254-519-5796, or by emailing Dr. DeEadra Albert-Green at deeadra.albertgreen@tamuct.edu.
    - Chat live with a tutor 24/7 for almost any subject on your computer! Tutor.com is an online tutoring platform that enables A&M-Central Texas students to log-in and receive FREE online tutoring and writing support. This tool provides tutoring in over forty subject areas. Access Tutor.com through Canvas.
- **University Writing Center:** Located in 416 Warrior Hall, the University Writing Center (UWC) at Texas A&M University-Central Texas is a free workspace open to all TAMUCT students from 10am-5pm Monday-Thursday with satellite hours in the University Library Monday-Thursday from 6:00-9:00pm. Students may arrange a one-on-one session with a trained and experienced writing tutor by visiting the UWC during normal operating hours (both half-hour and hour sessions are available) or by making an appointment via WCOnline at [https://tamuct.mywconline.com/]. In addition, you can email Dr. Bruce Bowles Jr. at bruce.bowles@tamuct.edu to schedule an online tutoring session. Tutors are prepared to help writers of all levels and abilities at any stage of the writing process.
    - While tutors will not write, edit, or grade papers, they will assist students in developing more effective composing practices. By providing a practice audience for students' ideas and writing, our tutors highlight the ways in which they read and interpret students' texts, offering guidance and support throughout the various stages of the writing process. In addition, students may work independently in the UWC by checking out a laptop that runs the Microsoft Office suite and connects to WIFI, or by consulting our resources on writing, including all of the relevant style guides. Whether you need help brainstorming ideas, organizing an essay, proofreading, understanding proper citation practices, or just want a quiet place to work, the University Writing Center is here to help!
    - If you have any questions about the University Writing Center, please do not hesitate to contact Dr. Bruce Bowles Jr. at bruce.bowles@tamuct.edu.
- **The University Library** provides many services in support of research across campus and at a distance. We offer over 200 electronic databases containing approximately 250,000 eBooks and 82,000 journals, in addition to the 72,000 items in our print collection, which can be mailed to students who live more than 50 miles from campus. Research guides for each subject taught at A&M-Central Texas are available through our website to help students navigate these resources. On-campus, the library offers technology including cameras, laptops, microphones, webcams, and digital sound recorders.

- Research assistance from a librarian is also available twenty-four hours a day through our online chat service, and at the reference desk when the library is open. Research sessions can be scheduled for more comprehensive assistance, and may take place on Skype or in-person at the library. Assistance may cover many topics, including how to find articles in peer-reviewed journals, how to cite resources, and how to piece together research for written assignments.
- Our 27,000-square-foot facility on the A&M-Central Texas main campus includes student lounges, private study rooms, group work spaces, computer labs, family areas suitable for all ages, and many other features. Services such as interlibrary loan, TexShare, binding, and laminating are available. The library frequently offers workshops, tours, readings, and other events. For more information, please visit our Library website [https://tamuct.libguides.com/].

Amendments

Not all exigencies can be foreseen. I reserve the right to amend the syllabus at any time. Any such amendment will be provided to the students in writing.

Course Schedule

Dates	Topic	Assigned Readings (to be completed before class)	Portfolio Milestones
Jan 16	Formal Models in Political Science	• None	
Jan 23	Decision Theory I: Rational Choice	• Hansson, Decision Theory: A Brief Introduction: Sections 1-5 and 9 • Rawls, A Theory of Justice, Sections 3-4, 11, 15, 24-26, 29, 69, [76, 80, 81] • **Academic Integrity Exercise Due**	
Jan 30	Decision Theory II: Expected Utility Theory	• Davis, Game Theory: A Nontechnical Introduction, Chapter 4: "Utility Theory" • Morrow, Game Theory for Political Scientists, Chapter 2: "Utility Theory" • Humphreys, Political Games, Section 7	
Feb 6	Game Theory I: Pure Strategy Nash Equilibria	• Spaniel, GT 101: The Complete Textbook, Lessons 1.1-1.4 • Humphreys, Political Games: Introduction and Sections 1-3 • Hobbes, Leviathan, Chapter 13 • Skyrms, The Stag Hunt and the Evolution of Social Structure, Chapter 1	**Draft I**
Feb 13	Game Theory II: Mixed Strategy Nash Equilibria and Repeated Games	• Spaniel, GT 101: The Complete Textbook, Lessons 1.5-1.7 • Humphreys, Political Games, Sections 4-6, 46, 48-49 • Axelrod, "Effective Choice in the Prisoner's Dilemma"	
Feb 20	Game Theory III: Backwards Induction and Subgame Perfect Equilibria	• Humphreys, Political Games, Sections A1 (pp. 128-129) and 38-39 • Spaniel, GT 101: The Complete Textbook, Lessons 2.1-2.5, 2.7 • Clinton, "Game Theory, Legal History, and the Origins of Judicial Review: A Revisionist Analysis of *Marbury v. Madison*"	Be prepared to discuss your progress
Feb 27	Bargaining Theory I: Ultimatums and the Power to Propose	• Spaniel, GT 101: Bargaining, Chapters 1-5 • Humphreys, Political Games, Sections 23-24, 26-30, 37	**Draft II**

Dates	Topic	Assigned Readings (to be completed before class)	Portfolio Milestones
Mar 6	Bargaining Theory II: Rubinstein Games	• Spaniel, GT 101: Bargaining, Chapters 6-11 • Walter, Committing to Peace: Successful Settlements of Civil Wars, Chapter 2: "Theory and Hypotheses" • Fearon, "Rationalist Explanations for War" • Humphreys, Political Games, Section 45	
Mar 13	No Class	• No Class: Spring Break	
Mar 20	Spatial Models	• Morgan, Untying the Knot of War: A Bargaining Theory of International Crises, Chapter 2: "A Spatial Model of Crisis Bargaining" • Black, "On the Rationale of Group Decision-making" • Achen and Bartels, Democracy for Realists: Why Elections Do Not Produce Responsive Government, Chapters 1-2 • Krehbiel, "Spatial Models of Legislative Choice" • Humphreys, Political Games, Sections 12, 14-15, 17-18	**Draft III**
Mar 27	Social Choice I: Collective Action	• Olson, The Logic of Collective Action: Public Goods and the Theory of Groups, Chapters 1-2 • Humphreys, Political Games, Sections 42, 43, 20-21, 25	
April 3	No Class	• No Class: International Studies Association Annual Meeting	
April 10	Social Choice II: Impossibility Theorems	• Morreau, "Arrow's Theorem" • Aldrich, "The Dilemma of a Paretian Liberal: Some Consequences of Sen's Theorem" • Humphreys, Political Games, 8-10, 19	**Draft IV**
April 17	Alternatives: "Nonrational" Models of Political Decisionmaking	• Jones, "Bureaucratic Politics and Organizational Process Models" • Taliaferro, "Prospect Theory and Foreign Policy Analysis" • Red, Brulé, and Mintz, "Poliheuristic Theory and Foreign Policy Analysis" • Bazerman and Neale, Negotiating Rationally, Part One: "Common Mistakes in Negotiation"	
April 24	Student Presentations I	• None	**Research Presentation**
May 1	Student Presentations II	• None	**Final Draft**

Dates	Topic	Assigned Readings (to be completed before class)	Portfolio Milestones
May 8	Final Exam	• Review All	

POLI 4395
Appendix A: 60 Ideas for Decision-making Paper Topics

These questions might all be usefully addressed using game theory. For some of them, decision theory alone might reveal some interesting hypotheses.

A. American Politics
    1. When do Presidents choose to go public with policy proposals?
    2. When do Presidents decide to use executive agreements in foreign policy rather than treaties?
    3. What influence does partisanship have over Presidential veto decisions?
    4. Why do some Presidents issue more executive orders than others?
    5. What affects Presidential budgetary proposals (for some specific program, perhaps)?
    6. When do Presidents use force unilaterally rather than seeking Congressional authorization?
    7. Are Presidents more likely to use force when their popularity ratings/economic growth fall?
    8. What explains the roll-call votes of members of Congress?
    9. What causes Congressional gridlock?
    10. Do campaign donations change policy in Congress/the Presidency/executive bureaucratic agencies?
    11. What predicts the votes of Supreme Court Justices?
    12. What predicts whether the Supreme Court will agree to hear a case?
    13. What affects the choice of candidates by voters?
    14. What affects whether people vote?
    15. What effect do political factors have on judicial decisions to impose the death penalty?
    16. When does the Supreme Court uphold executive agency decisions?
    17. Why might Southerners vote differently than people elsewhere in the country?
B. Comparative Politics
    1. Does state strength cause or prevent political violence?
    2. What causes – or reverses -- democratization?
    3. What causes genocide?
    4. What causes civil wars?
    5. Why do some civil wars recur?
    6. Why do some civil wars end in negotiated settlements while others end only in military victory or stalemate?
    7. What predicts how much foreign aid a country will give?
    8. When do power-sharing agreements work?
    9. Why are some countries characterized by more income inequality than others?
    10. What causes domestic terrorism?
    11. What causes coups d'état?
    12. What effect does central bank independence have on the economy?
    13. Does religious diversity promote conflict/autocracy?
    14. Under which forms of government do leaders retain office the longest?
    15. How does political culture affect democracy/development?
    16. Does federalism promote peace/development/democratic consolidation?

17. Does resource scarcity promote conflict/autocratization?
18. Why do some countries adopt fixed exchange rates while other opt to allow their currencies to float on the global market?
19. What leads to more/less respect for human rights by leaders?

C. International Relations
    1. What causes interstate war?
    2. Why don't democracies fight each other?
    3. Does capitalism promote international peace?
    4. Does trade promote international peace?
    5. What types of issues are most likely to lead to war?
    6. Why do some crises escalate to war while others are resolved short of war?
    7. What effects do arms races have on the probability of war?
    8. What effect do outside alliances have on the probability of war?
    9. When do countries follow the laws of war?
    10. When do countries resolve disputes through arbitration?
    11. Are revolutionary governments more aggressive?
    12. When do states honor international agreements?
    13. Why are some cease-fires more successful than others?
    14. What determines where peacekeepers are sent?
    15. What are the political causes of trade?
    16. Do international organizations promote peace?
    17. What causes nuclear proliferation?
    18. Do nuclear weapons produce peace?
    19. What counterinsurgency strategies are most effective?
    20. Are power-seeking states under international anarchy condemned to fight one another?

D. Normative Political Theory
    1. Which decision-rule would people seeking both their own welfare and stability adopt for determining Rawlsian distributional justice under a veil of ignorance (represented by uncertainty) – maximax, maximin, or minimax regret?
    2. Given a particular political theorist's view of the social contract, what determines whether it is honored?
    3. Can an expected-utility maximizer with the right preferences always act consistently with the ethical prescriptions of Mill's utilitarianism?
    4. To what extent is Kant's deontology consistent with expected utility theory?

POLI 4395 Name _____

Worksheet on Decision Theory I

1. Draw a decision matrix for the decision on whether to buy a six-number lottery ticket with the numbers 1-2-3-4-5-6, assuming there is an equal probability for each number to be drawn. Imagine that the ticket is a dollar and the payout is a million dollars. You do not need to "solve" the matrix; I just want to see you represent the problem using states of nature (aka states of the world) and choices.

2. Provide the minimax regret solution (see Hansson, 61-62) for the following decision problem under uncertainty. Which policy is selected? Don't forget to make the regret matrix as instructed by Hansson.

	State of the World 1	State of the World 2	State of the World 3	State of the World 4
Policy 1	1	5	0	2
Policy 2	2	7	5	5
Policy 3	4	4	5	1
Policy 4	5	6	1	3
Policy 5	6	2	3	2
Policy 6	9	1	4	1

Regret Matrix:

	State of the World 1	State of the World 2	State of the World 3	State of the World 4
Policy 1				
Policy 2				
Policy 3				
Policy 4				
Policy 5				
Policy 6				

3. Use leximin (that is, maximin that breaks ties based on the next-worst outcome) to solve the same decision problem:

	State of the World 1	State of the World 2	State of the World 3	State of the World 4
Policy 1	1	5	0	2
Policy 2	2	7	5	5
Policy 3	4	4	5	1
Policy 4	5	6	1	3
Policy 5	6	2	3	2
Policy 6	9	1	4	1

4. Rawls presents the reader with a simple decision matrix on p. 136. The choice is between principles of justice that will guide the formation of a social contract.

	I am born into the least-favored group	**I am born into a favored group**
Principle 1	1/n	n
Principle 2	0	1

Which choice is recommended by maximin when n = 2? Does that choice seem like a reasonable one?

5. What if n = 1,000,000? What choice does maximin recommend? Does that choice seem like a reasonable one?

6. List at least two of the arguments used by Rawls to justify using maximin to select principles of justice that form the basis for the structure of the social contract.

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Worksheet on Decision Theory II

1. List the assumptions of expected utility theory in Davis. How reasonable is each?

2. Complete Exercise 2.1 from Morrow. Show your work.

3. Complete Exercise 2.4 from Morrow. Part (a) asks for a utility function, but you only need to establish the values of $u[C_1]$, $u[C_2]$, $u[C_3]$, and $u[C_4]$. You don't need to write the results as a function. Once you solve (a), solving (b) should be easy.
   (a)

   $u[C_1]=$

   $u[C_2]=$

   $u[C_3]=$

   $u[C_4]=$

   (b)

   $u[L_1]=$

   $u[L_2]=$

   Which lottery is preferred, according to expected utility theory?

4. Suppose that I have decided to take out renter's insurance to protect myself in case of fire, theft, etc. I also buy scratch-off tickets from time to time. Why is my behavior probably inconsistent with the predictions of expected utility theory?

5. Why is utilitarianism – but not expected utility theory – vulnerable to the Robbins critique?

POLI 4395 Name _____
Worksheet On Game Theory I

Introduction: A game in normal (or strategic) form usually looks like this:

	Strategy 1*	Strategy 2*
Strategy 1	Player 1 payoff, Player 2 payoff	Player 1 payoff, Player 2 payoff
Strategy 2	Player 1 payoff, Player 2 payoff	Player 1 payoff, Player 2 payoff

Note that the players are often referred to as R (the row player – by convention called Player 1) and C (the column player – by convention called Player 2). The payoffs are therefore listed as "row player, column player" – the first number represents what Player 1 gets and the number after the comma represents what Player 2 gets. In Humphreys, the payoffs are represented as numbers in the lower left (Player 1 or Row Player) and upper-right (Player 2 or column player):

	Strategy 1*	Strategy 2*
Strategy 1	Player 2 payoff Player 1 payoff	Player 2 payoff Player 1 payoff
Strategy 2	Player 2 payoff Player 1 payoff	Player 2 payoff Player 1 payoff

The payoffs may represent either ordinal or cardinal utilities. Remember the rules of utility theory, which bar the interpersonal comparison of utility. The players are not trying to "get more utility" than the other players; rather, they are attempting to maximize (or under uncertainty maximize the minimum of) their <u>own</u> utility.

Instructions: This homework exercise asks you to "solve" a game using two different solution methods. Solving the game means eliminating possible outcomes until as few as possible remain. There may be zero, one, or many outcomes that remain after application of a given principle. The game is identical in each case; I've provided three copies of it.

1. Solve with iterated dominance (SESDS). Simply draw a line through each strongly dominated strategy and put a number next to the line (1, 2, 3, 4, 5, etc.) so I can see the sequence in which strategies were eliminated. Circle any outcomes which remain after this process.

	Strategy A'	Strategy B'	Strategy C'	Strategy D'	Strategy E'
Strategy A	1, 1	15, -2	5, -1	-3, 5	3, 3
Strategy B	3, 5	-2,0	10, 4	15, -4	2, 3
Strategy C	1, 10	10, 2	6, 3	10, 5	0, 8
Strategy D	0, 3	1, 1	5, 5	4, 2	6, 4
Strategy E	2, 3	3, 7	8, 8	2, 3	4, 5
Strategy F	1, 5	2, -1	7, 0	0, 0	3, 1

2. Circle any Nash Equilibria which result from pure strategies. Use the * system from the text to mark each player's best response to each strategy that exists for the other player.

	Strategy A'	Strategy B'	Strategy C'	Strategy D'	Strategy E'
Strategy A	1, 1	15, -2	5, -1	-3, 5	3, 3
Strategy B	3, 5	-2,0	10, 4	15, -4	2, 3
Strategy C	1, 10	10, 2	6, 3	10, 5	0, 8
Strategy D	0, 3	1, 1	5, 5	4, 2	6, 4
Strategy E	2, 3	3, 7	8, 8	2, 3	4, 5
Strategy F	1, 5	2, -1	7, 0	0, 0	3, 1

3. 2x2 games in normal form are named by the *preference ordering* for each player over their outcomes. The names of the strategies don't determine the name of the game. What game described by Humphreys is this?

	Strategy 1*	Strategy 2*
Strategy 1	30, 30	0, 20
Strategy 2	20, 0	10, 10

4. Model the Hobbesian state of nature with a simple 2x2 game representing the interaction of two players under anarchy. Their strategies are to honor agreements or break them whenever it is convenient. Think about what happens to each player under each combination of strategies.

		Player 2	
Player 1			
		,	,
		,	,

5. How many Nash equilibria in pure strategies exist in Stag Hunt? How might this explain the formation of a social contract?

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Worksheet on Game Theory II

In the game of football, one team at a time plays offense while the other team plays defense. The team on offense has two types of strategy open to it – running the ball, which has a high probability of gaining some ground (yardage), or passing the ball, which is less likely to succeed but usually offers more yardage if it does. As for the defense, they have the option to prepare a defense against an offensive run play or to prepare a defense better-suited to an offensive pass play. Some hypothetical average payoffs could be the following:

		Defense	
Offense		Block the Run	Block the Pass
	Run the Ball	0,0	5,-5
	Pass the Ball	10,-10	0,0

1. Mark any pure strategy Nash equilibria of the game. How many are there? _____
2. Now identify the mixed strategy Nash equilibrium of the game. This means solving for the probabilities that the offense plays Run the Ball (p), the probability it Passes the Ball (1-p), the probability the defense Blocks the Run (q) and the probability that the defense Blocks the Pass (1-q). Try to follow along with the following steps:

   Write the expected utility for the Offense of choosing Run the Ball given q and 1-q.
   $EU_O(Run) =$

   Write the expected utility for the Offense of choosing Pass the Ball given q and 1-q,
   $EU_O(Pass) =$

   Write the expected utility for the Defense of choosing Block the Run given p and 1-p.
   $EU_D(Run\ Block) =$

   Write the expected utility for the Defense choosing Block the Pass given p and 1-p.
   $EU_D(Pass\ Block) =$

   Now set Player 2's (Defense) expected utilities given p and 1-p equal to each other. Substitute in the utility functions above for the following:
   $EU_O(Run) = EU_O(Pass)$

Now use the equation you wrote above to solve for p.

p = _____ 1-p = _____

Now set Player 1's (Offense) expected utilities given q and 1-q equal to each other. Substitute in the utility functions above for the following:

EU_D(Run Block) = EU_D(Pass Block)

Now use the equation you wrote above to solve for q.

q = _____ 1-q = _____

So the Offense Runs with probability _____ and Passes with probability _____, while the Defense Blocks the Run with probability _____ and Blocks the Pass with probability _____.

3. Now suppose that a team acquires an excellent running back, so that successful runs pay off much better than previously:

		Defense	
Offense		Block the Run	Block the Pass
	Run the Ball	0,0	**8,-8**
	Pass the Ball	10,-10	0,0

Find the mixed strategy equilibrium as in Question 2 (follow the same steps). Attach a sheet with your work.

4. Does the team that acquired a better running back for its offense in Question 3 run the ball more or less than it did in Question 2?

5. What is required for mutual cooperation to be a possible equilibrium in a Prisoners' Dilemma game?

6. Counterintuitively, self-interested and rational "Dums" are outcompeted by "Dees" that lack at least one of those characteristics (in a world characterized by Prisoners' Dilemma type interactions). Why?

7. Why did Tit-for-Tat outperform other strategies in Axelrod's tournament of Prisoners' Dilemma games?

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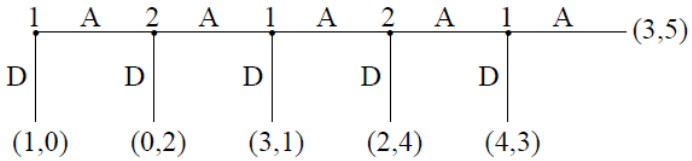
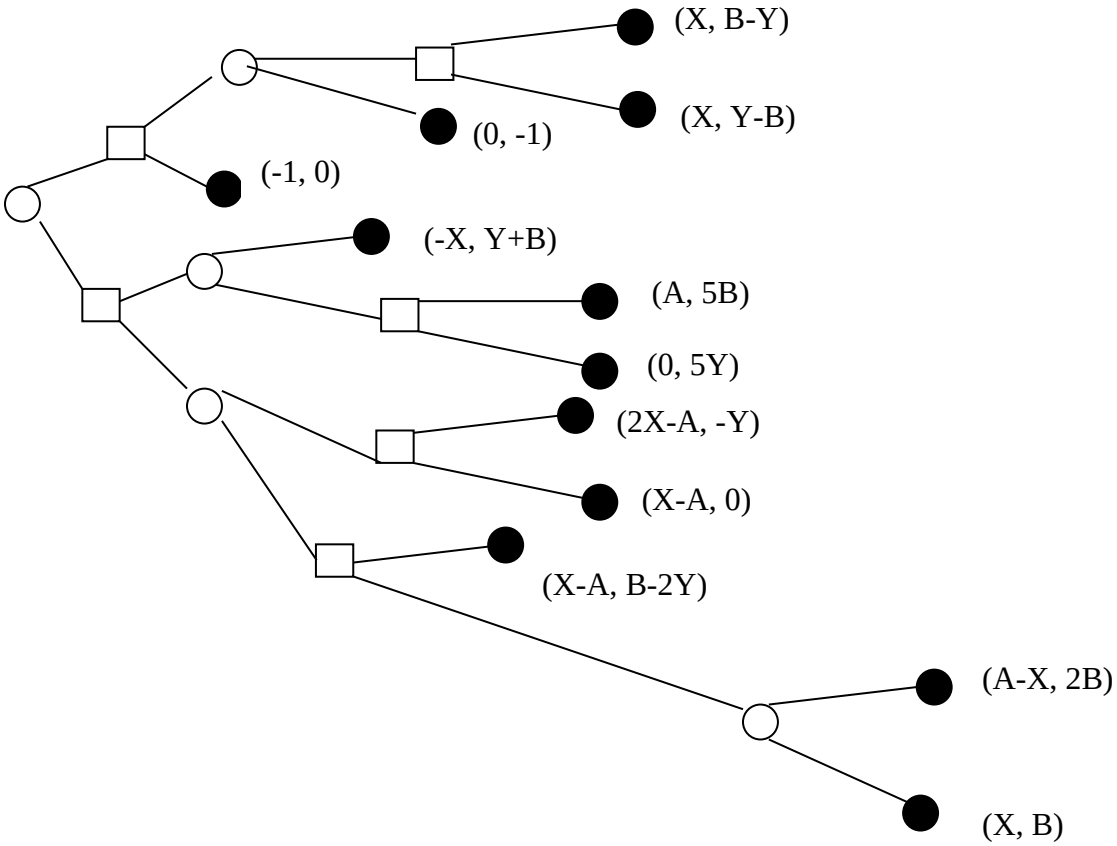
Worksheet on Game Theory III

1. Find the subgame-perfect equilibrium (SPE) for the following game through backwards induction. What is odd about the SPE outcome?

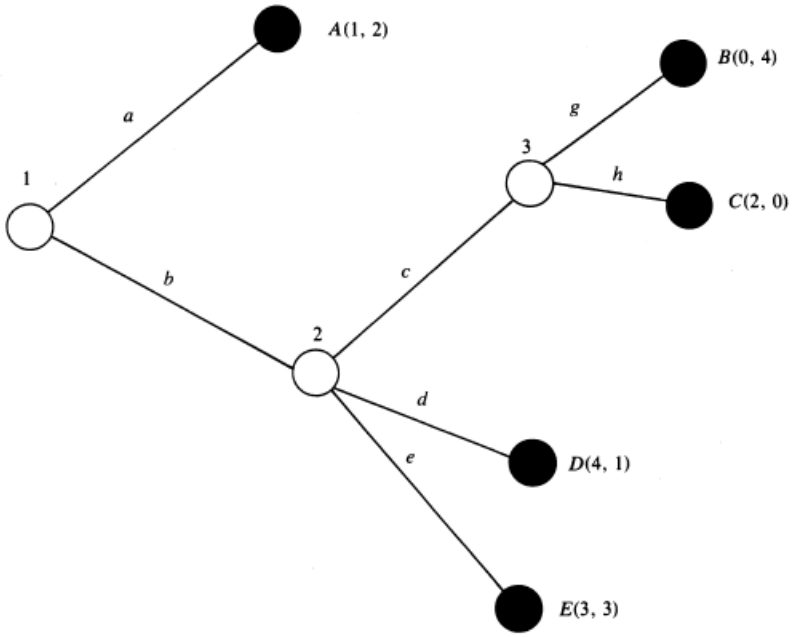


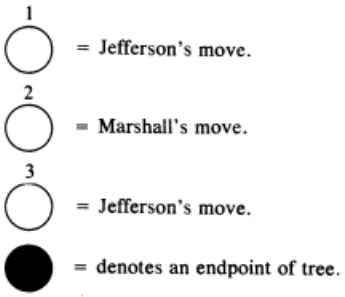
2. Now solve the following two-player game (circle vs. square) by backwards induction. Assume that A,B, X, and Y are all positive numbers (greater than zero) and that X>A and B>Y. Be sure to remember that circle player is player one!



3. Solve Clinton's Marshall-Jefferson game using backward induction. Was the historical outcome a subgame perfect equilibrium?

Figure 1





Note: Lowercase letters indicate choices (described in text); uppercase letters denote outcomes (described in Table 1).

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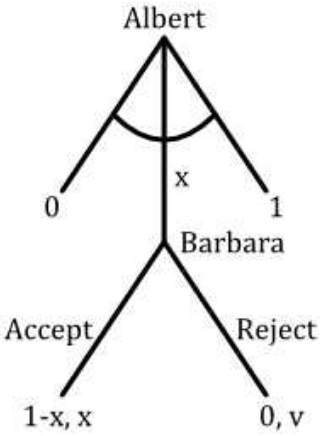
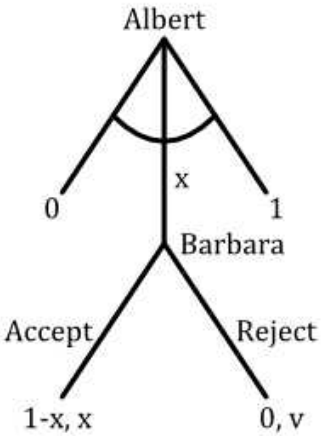
Worksheet for Bargaining Theory I

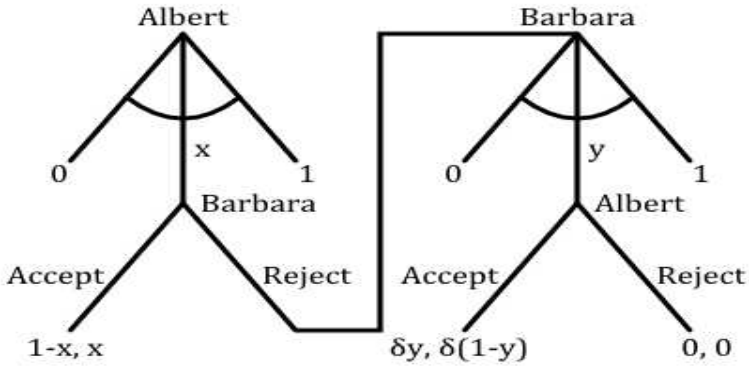
1. Solve for x, assuming that v=0 and indifferent players accept offers.



2. Solve for x where v = 0.8 and indifferent players accept offers.



Here is a two-stage ultimatum game with a discount factor ($0 > \delta > 1$), multiplicatively applied to each player's payoff after each round of bargaining after the first: Assume players accept when indifferent.



3. What is the subgame perfect equilibrium of the game?

4. What is the optimal offer for Player 1?

5. What is Aumann's Agreement Theorem?

6. John Nash is known in political science for two seminal results reached at the onset of his career. We've already covered the Nash equilibrium in normal-form games. However, Humphreys (Section 27) details his other discovery of that time – which is a very different problem than solving for a Nash equilibrium in a game. My question about his solution is this: What is it? That is, how do we identify the point that specify how much each bargainer receives, given the risk orientation of each side and that the assumptions of the Nash bargaining problem are met?

7. What are the utilities associated with the subgame perfect equilibrium to Figure 28 in Humphreys?

8. What is the Myerson-Satterthwaite Theorem, and how might it explain the existence of conflict or even war between rational actors?

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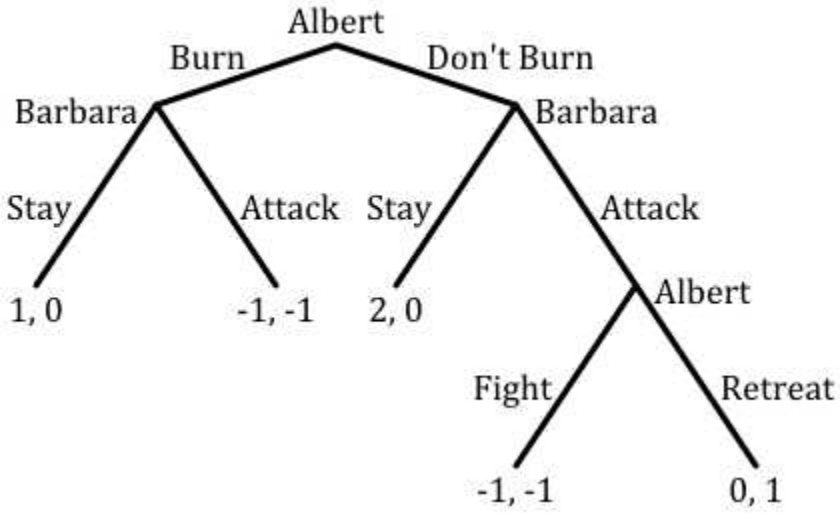
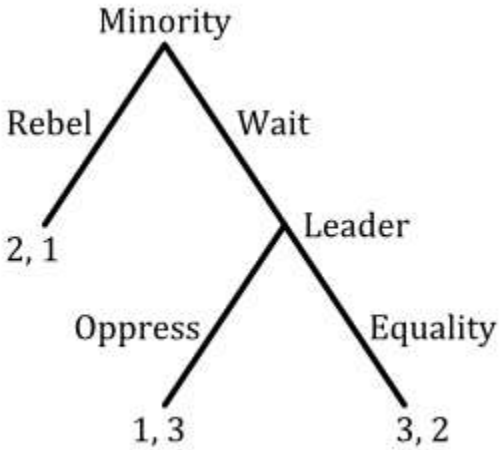
Worksheet on Bargaining II

1. Should one burn one's own bridges to prevent one's forces from retreating? What is the choice Albert makes in the first node under the subgame perfect equilibrium of the following game?



2. What makes Albert's threat to fight credible?

3. Imagine a new state becomes independent, with a leader of the majority group and a minority group that worries about being oppressed by the new majoritarian government. Further, assume that as the government consolidates its new authority, it becomes harder (in this case impossible) to challenge in armed rebellion. Should the minority rebel now or wait to see if they'll be oppressed once leadership is consolidated?



4. What <u>reduces</u> the first mover advantage in Rubinstein bargaining?

5. Find the Subgame Perfect Equilibrium/Equilibria of Walter's basic model (Figure 2.1). Bear in mind that she doesn't say what happen when players are indifferent, so there may be many subgame-perfect equilibria. Once you have the payoffs for the Phase 3 subgame written down, just use normal form to find the Nash Equilibrium (there is only one) in pure strategies. Knowing the equilibrium payoffs of Phase 3 then allows you to solve Phases 1 and 2 by backwards induction.

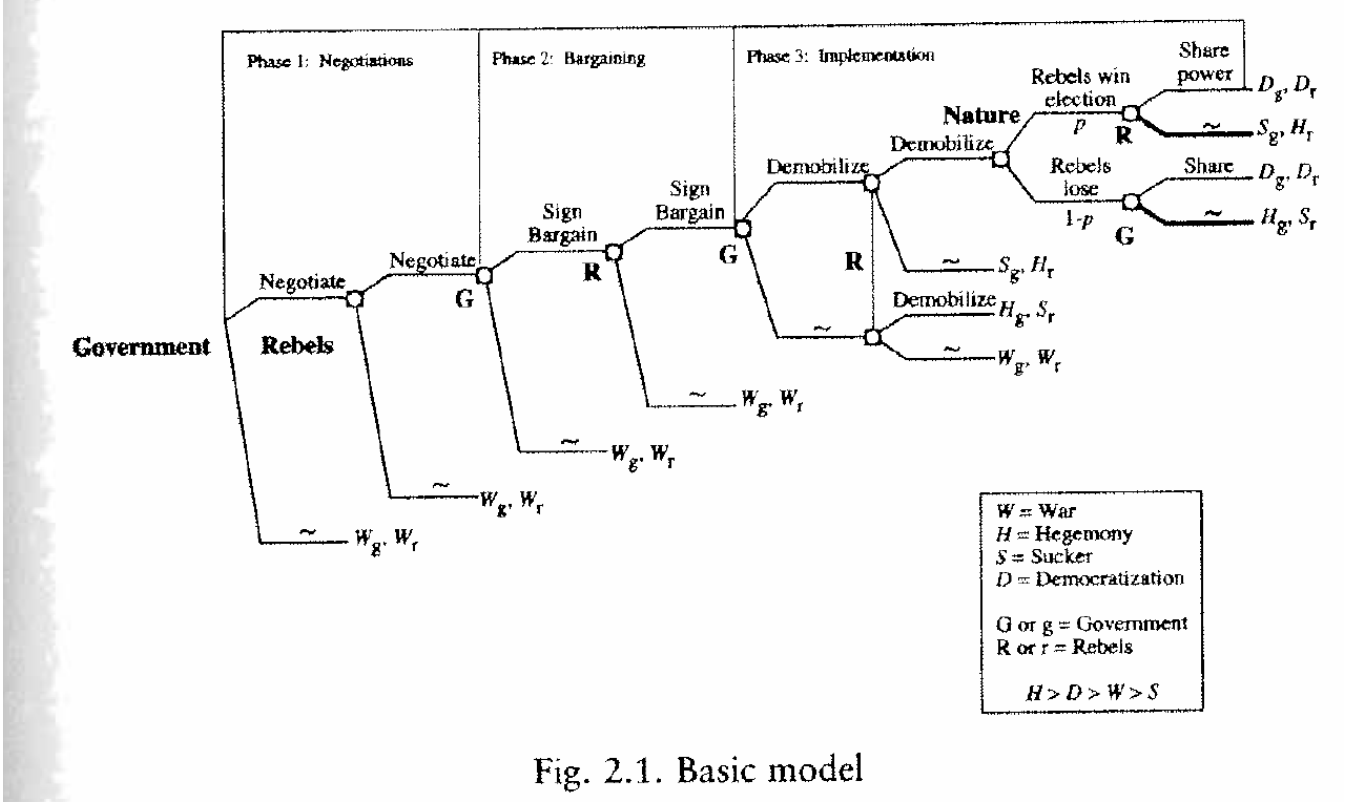


Fig. 2.1. Basic model

	Rebels		
		Demobilize	Don't Demobilize
Government	Demobilize		
	Don't Demobilize		

6. What are Fearon's three reasons that war might occur as the result of mutual rational choice?

7. Does the Myerson-Satterthwaite Theorem from last week offer another path to war between rational actors, or is it really one of Fearon's three paths (if so, specify which one)?

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Worksheet on Spatial Models

1. How is war represented in Morgan's model? What is one criticism of this approach?

2. How is resolve represented in Morgan's model?

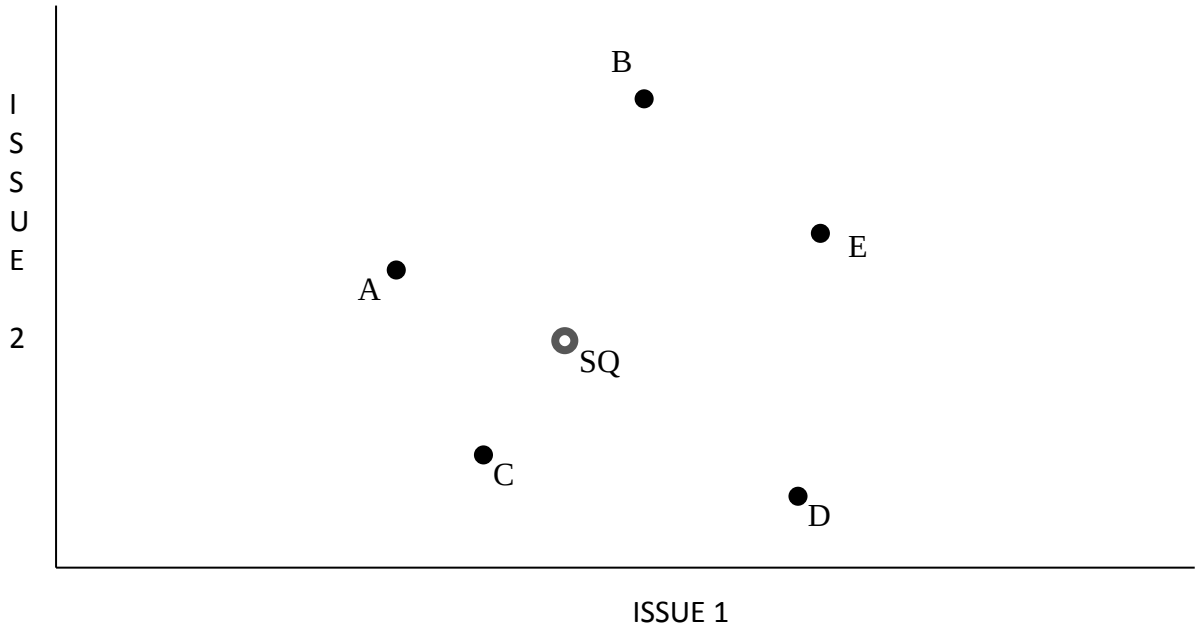
3. How realistic is each assumption of the median voter theorem as described by Black?

4. Identify the policy chosen (by approximate number, not letter) in the following case, assuming single-peaked preferences and all other assumptions of the median voter theorem apply. A-G are policymakers' ideal points and the numbers represent different policies along a continuum, from no action (0) to radical action (100).

A	B				C			D	E	FG
0	10	20	30	40	50	60	70	80	90	100

5. List at least two objections Achen and Bartels make to the Downesian spatial model of democracy in the United States.

6. Show that some new policy (mark it as P) can be reached from initial policy SQ through majority vote, given single-peaked, monotonic, and circular indifference curves for each voter. Note that P and SQ are policies, not voters. A, B, C, D, and E are the voters.



7. How can proposal power be more powerful than the actual ability to cast a vote?

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Worksheet on Social Choice I

Under what conditions is the public good of "safety to walk the streets at night" provided, given the following information? The neighborhood has *p* potential participants P $\{P_1, P_2, P_3, \ldots P_n\}$ in crime-fighting efforts. Participation carries a cost of *c* for each member that participates. Safe streets provide benefit of *b* for everyone, participants (P) and non-participants (N) alike. The amount of safety provided is

$$b = f + s\left(\frac{n}{p}\right)$$

or the minimal benefit provided by police (*f*) plus the benefit of an effective neighborhood watch (*s*) times the number of participants (*n*) as a proportion of possible participants (*p*). In other words, every person's contribution matters by the same amount.

1. Write the expected utility for person P_i if he/she participates in the watch:

   EU_{Pi}[Participate] =

2. Write the expected utility for person P_i if he/she does not participate in the watch:

   EU_{Pi}[Do Not Participate] =

3. Now construct an inequality which, if true, means that a person chooses to participate. Assume that a person only participates if the expected utility of participation is greater than the expected utility of nonparticipation. Then simplify both sides as much as you can after writing the initial inequality.

4. According to the inequality you constructed, what is the effect (if any) of *p* becoming larger? Is the inequality more likely to be true (meaning that the amount of safety provided increases as the pool of potential participant expands) or false (meaning that it decreases, since individuals have less of an incentive to contribute by participating)?

5. According to the inequality you constructed, what is the effect (if any) of *s* becoming larger? Is the inequality more likely to be true (meaning that the amount of safety provided increases as the pool of potential participant expands) or false (meaning that it decreases, since individuals have less of an incentive to contribute by participating)?

6. According to the inequality you constructed, what is the effect (if any) of *f* becoming larger? Is the inequality more likely to be true (meaning that the amount of safety provided increases as the pool of potential participant expands) or false (meaning that it decreases, since individuals have less of an incentive to contribute by participating)?

7. Explain either the Swing Voter's Curse (21 in Humphreys) or the Limits of Deliberation (25 in Humphreys):

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Worksheet on Social Choice II

1-5. What are Arrow's five assumptions, and how reasonable is each, empirically (i.e. it accurately describes reality) and normatively (i.e. the political process should meet this condition)?

Assumption 1:

Empirical Realism:

Normative Desirability:

Assumption 2:

Empirical Realism:

Normative Desirability:

Assumption 3:

Empirical Realism:

Normative Desirability:

Assumption 4:

Empirical Realism:

Normative Desirability:

Assumption 5:

Empirical Realism:

Normative Desirability:

6. What is the “dilemma” faced by a Paretian liberal?

7. Show that the following voting system violates one or more assumptions of Arrow’s Theorem. An election with at least three candidates is held and the top two vote-getters then engage in a runoff election. For simplicity, assume 100 voters and that no voter is indifferent between any two candidates. *Hint: Start with universal domain and come up with rational preference rankings for the voters that result in a social preference that violates of one of Arrow’s other assumptions.*

8. What is the central finding of the Gibbard-Satterthwaite Theorem?

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Worksheet on Alternatives to Rational Choice Theory

1. List every assumption in expected utility theory (again – but you do not need to describe them again) and <u>why</u> each is true or false, according to today's readings.

2. In prospect theory, what is a value function?

3. In prospect theory, what is a weighting function?

4. China has done something that President Obama doesn't like and he needs to decide on a policy response. His advisers hand him reports on the likely diplomatic, economic, military, and domestic consequences of each proposed policy, as follows (higher numbers mean better consequences). Use poliheuristic theory to show how he might approach the problem. There are multiple correct answers to this question, but there are also incorrect answers. Be sure to use the two-phase method described by poliheuristic theory.

	Diplomatic Consequences	Economic Consequences	Military Consequences	Domestic Political Consequences
Policy 1	1	7	5	0
Policy 2	1	5	6	5
Policy 3	5	4	0	0
Policy 4	0	4	2	5
Policy 5	5	2	1	0
Policy 6	6	1	4	5

5. Provide three examples of irrational behavior from Bazerman and Neale. Why is each irrational? That is, what assumptions of rational choice are violated?