

Exercises for:

**Multimethod research, causal mechanisms, and case studies: an
integrated approach**

and

**A tale of two cultures:
qualitative and quantitative research in the social sciences**

and

Social science concepts: a user's guide

and

**Explaining war and peace:
case studies and necessary condition counterfactuals**

Version 3

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This marks the third, roughly annual, version of my collected exercises. Most notable in this edition is that the *Multimethod research, causal mechanisms, and case studies: an integrated approach* has just been published by Princeton University Press (August 2017, <http://press.princeton.edu/titles/11191.html>). In addition to multimethod research it covers, multiple (or comparative) case study research, using case studies to systematically test hypotheses. As such I have included new sections below. "Case studies and case selection" deals with selecting cases for multiple case study or multimethod research. "Multimethod research" includes not only the most common statistical analyses plus case studies, but also game theory multimethod defined as a formal model plus case studies (a whole chapter of the book is devoted to this). The "large-N qualitative testing and medium-N designs" section provides additional examples and issues for systematically using case studies to test game theoretic models, statistical results, or the systematic use of a medium-N set of case studies as a research design. As the book title indicates causal mechanisms are absolutely central and hence there is a new section treating this topic.

As usual there are multiple additions in the concept, measurement, and scaling sections as well as a few additions to most other sections.

There are about 50 new exercises, bringing the total number up to about 300.

With the publication of the book coauthored with Jim Mahoney - *A tale of two cultures: qualitative and quantitative research in the social sciences* (Princeton 2012) - I decided to consolidate all the exercises that I and various coauthors have developed over the years. As the title of the exercises indicates this includes my book on concepts, the book on counterfactuals and case studies coedited with Jack Levy. For example, much of the chapters on concepts and measurement in the *Two cultures* book was foreshadowed by exercises for the concept book.

As such I have created categories which span all of these projects. In general there is no specific indication which book is being referred to, and in many cases an exercise could easily apply to multiple books. However, if the exercise deals with concepts it is likely to be the *Social science concepts: a user's guide* or *Two cultures*. If is on case selection it could be any of them except the *Case studies and necessary condition counterfactuals* book. If in contrast, it is about within-case causal explanations of World War I or the end of the Cold War then it is likely to be the *Explaining war and peace* book.

Answers to these exercises (except those that are open-ended and those that I think would be interestingly but have not yet had the time to do) may be obtained by instructors from me (ggoertz@nd.edu). If you would like to be informed when these exercises are updated please contact me and I will put you on the emailing list.

Most of the articles and book chapters referred to in the following exercises are available in pdf format and complete references are found at the end. If possible I have chosen an electronically available article rather than a book. Some of the exercises work well in more than one section and hence an exercise may appear more than once.

At the beginning are the new exercises which I have added since the previous version. In general the newest questions are at the beginning of each section.

Finally, starting in Jan 2017 I am beginning work on a large-scale revision and expansion of the social science concepts book. The first half of the book will probably double in length as several new chapters will added and the old ones expanded. If

you have suggestions about changes for that book they are welcome. Many of the exercises below will be incorporated into the "revised and expanded" edition.

As always, I welcome comments on these exercises and suggestions for new ones.

New exercises

Case studies and case selection

1. Collier and Collier (1991) is a class of comparative historical analysis. Central to their work is labor incorporation. Discuss their case selection on this variable and whether it should be a partially a scope condition.

Because their interest is in the effects of labor incorporation, they [Collier and Collier 1991] consider only the effects of variation in the productive condition: all eight of their cases saw labor incorporated into politics after a major social crisis in the early 20th century. Their interest is in the ways in which different “values” of the productive condition shape divergent regime outcomes over subsequent decades Since the permissive condition of the rise of labor bounds the theory of regime dynamics that they develop, it acts as a scope condition on the proposed relationship between the mode of labor incorporation and regime outcomes. (Soifer 2012, 1581-82 meth570.tex)

Here is the Slater and Simmons figure. Note that labor incorporation appears in both paths.

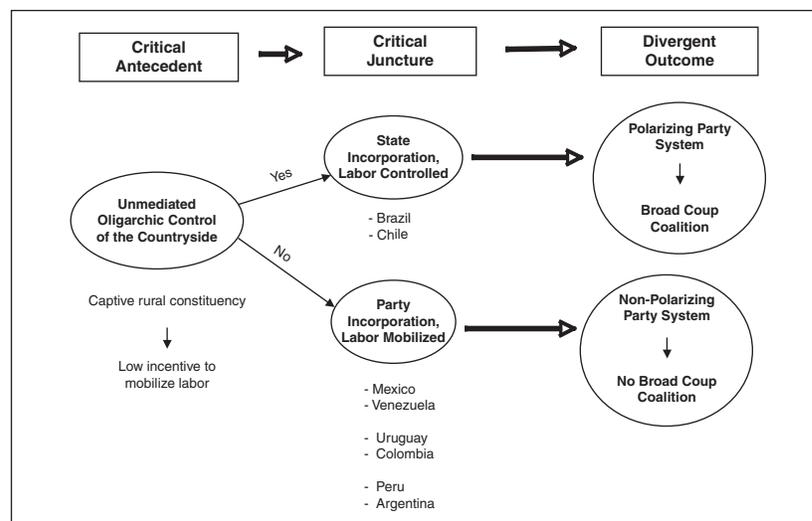


Figure 5. The Colliers on labour incorporation in Latin America

2. Discuss Huber and Stephens' (2012) case selection strategy, particularly its longitudinal variation on X and Y. Did they choose cases that were (1,1) cases at some point in their history? Note as well that their core theory involves an interaction term.

Of the various purposive strategies, we follow Ragin's (1987, 2000, 2008) advice to focus on the positive outcome cases, so we select all cases that had high values on the dependent variable as of 1980.19 This fits Goertz's (2008) admonition to choose diversely among positive outcome cases and Lieberman's (2005, 444) to select for wide variation in the explanatory variables

among the cases that fit the theory according to the quantitative analysis.
(49-50)

3. Ostermann (2007) looks at compliance with policy regarding wood harvesting in protected areas in a park which lies on the border between India and Nepal. She is interested in the effect of state policies on compliance. Discuss her case selection discussion in light of the Avoid Overdetermination Guideline. Discuss in particular the key confounding variables of “weak state presence” and “poverty” which can explain compliance or noncompliance.

The Terai region in the South of Nepal and the North-Indian state of Bihar is an excellent place to test compliance theories in adverse circumstance for two main reasons: (1) it fits squarely within a least favorable case research design—the states on both sides of the border are weakly institutionalized, at least in this region; and (2) the populations on either side of the border are generally poor and uneducated. Indeed, for much of the period leading up to this study, the states on both sides of the border had largely retreated from this region in response to armed Maoist movements. . . . Case selection was also part of an effort to use design to gain methodological traction on persistent questions in the sociolegal compliance literature. Chitwan and Valmiki are contiguous and divided only by an open international border that was not defined by geography or culture. The same culture and dominant ethnic group—the Tharus—prevail on both sides of the border, and most people in this region are poor, fairly uneducated, and speak the same language. (Ostermann 2006, 107)

4. Gerring and Cojocaru describe algorithmic case selection as follows:

Algorithmic case selection follows a set of rules executed in a sequence of steps, which we envision as follows.

- (a) Define the research question and the population of theoretical interest.
- (b) Identify a sample of potential cases. Ideally, this sampling frame should be representative of the population of interest.
- (c) Measure relevant features of the cases—for example, D, X, Y, and/or Z—across the sample.
- (d) Combine diverse indicators of D, X, Y, and/or Z into indices, *if necessary*.
- (e) Construct a causal model, *if required*. (Gerring and Cojocaru 2016, 411)

I have put “if necessary” and “if required” in italics. Given an example of an algorithmic approach where these items are not necessary or not required.

5. The medium-N paradigm means in this context exploring cases in border areas of the (1,1) zone as secondary case studies. For the democratic peace this would be borderline democracies or borderline peace (in the joint democracy is sufficient for peace version of the democratic peace). An interesting exercise to see what the cases scholars have used when critiquing of the democratic peace, e.g., Elman (1997) or Rosato (2003).
6. Norris in *Making Democratic Governance Work* is interested in the impact of governance and/or democracy on a variety of outcomes, e.g., economic growth, welfare, and conflict. She also uses case studies to illustrate her findings and approach. In the various chapters on various dependent variables she uses paired

comparisons. Discuss how she decides about these pairs focusing on the problem that she always has two independent variables – governance and democracy – in each chapter. For example, does she use the Avoid Overdetermination Guideline?

7. Copeland in an influential study of trade and militarized conflict makes claims about the democratic peace. Explain how his case selection (all major power crises and wars) does not include key cases for evaluating the democratic peace.

The trade expectations approach also helps us understand exactly what is at stake in the ongoing debate about the democratic peace. As we saw in chapter 2, it may well be the case that the correlation between mutual democracy and peace is really reflective of an economic peace as opposed to a political one. Democracies are unlikely to fight each other, in other words, not because they respect each other's normative values or because their legislatures pull illiberal leaders back from the brink, but rather because democracies generally have open liberal economic foundations and thus are able to signal their commitment to open-door economic policies into the future. (Copeland 2015, 434)

Answer:

By selecting only major-power crises and wars he does not include the non-barking dogs, where democracies are at high levels of peace.

8. Seawright (2016) argues for “extreme on X” case selection in multimethod research. Extreme on *X* could mean very high or very low or distant from the mean. Contrast that with “good” causal mechanism case selection as argued in *Multimethod research, causal mechanisms, and case studies: an integrated approach*, i.e., some extreme cases are good cases and others are not good cases.
9. Horowitz table 2.4 gives a list of all possible case studies: “The major military innovation cases evaluated in this study are the following: early twentieth-century battlefleet warfare, mid-twentieth-century carrier warfare, nuclear weapons, and suicide terrorism. As table 2.5 shows, this selection of [*four*, one per chapter] cases maximizes variation on the two key independent variables: financial intensity and organizational capital. It also allows for significant time variation, over a period of a century, and cases that focus on both nation-states and nonstate actors.” (Horowitz 2010, 61-62).

If you were going to do only *two* case studies and followed the Avoid Overdetermination Guideline which cases would you choose?

Multimethod research

10. Gerring and Cojocaru describe algorithmic case selection as follows:

Algorithmic case selection follows a set of rules executed in a sequence of steps, which we envision as follows.

- (a) Define the research question and the population of theoretical interest.
- (b) Identify a sample of potential cases. Ideally, this sampling frame should be representative of the population of interest.

- (c) Measure relevant features of the cases—for example, D, X, Y, and/or Z—across the sample.
- (d) Combine diverse indicators of D, X, Y, and/or Z into indices, *if necessary*.
- (e) Construct a causal model, *if required*. (Gerring and Cojocaru 2016, 411)

I have put “if necessary” and “if required” in italics. Given an example of an algorithmic approach where these items are not necessary or not required.

11. Gerring and Cojocaru describe Mansfield and Snyder’s work as follows. Using the discussion of large-N qualitative testing in *Multimethod research, causal mechanisms, and case studies: an integrated approach* explain what is wrong with their characterization.

In a setting where the relationship between X and Y is well established—perhaps as a result of cross-case analysis (the researcher’s or someone else’s)—the pathway case is usually focused specifically on causal mechanisms (M). An example is provided by Mansfield and Snyder’s (2005) research on regime transitions and war. The authors find a strong relationship between democratization and bellicose behavior in their large-n cross-national analysis. To ascertain whether their hypothesized causal mechanisms are actually at work in generating this relationship, they look closely at 10 countries where the posited covariational pattern between X and Y clearly holds, that is, where democratization is followed by war. (Gerring and Cojocaru 2016, 406)

Answer:

Their core hypothesis is an interaction between democratization and weak institutions, not democratization alone. They do *not* find a strong relationship between democratization alone and militarized conflict.

12. Discuss Pahre’s claim that necessary conditions violation common statistical assumes: “Third, necessary conditions violate the unit homogeneity assumption common in statistics, which states that ‘if two units have the same value of the key explanatory variable, the expected value of the dependent variable will be the same’ (King et al., 1994: 116). Necessary conditions violate this condition because observations x, y and x, not-y are both consistent with the necessary condition $x \leftarrow y$; in other words, x may occur with or without y” (Pahre 2005, 131).
13. Discuss the “light-switch” analogy as a way to think about process tracing and equifinality. The basic analogy is that the light-switch is on and the light is on (essentially the (1,1) cases). Discuss process tracing as following electricity through various junction boxes to the light bulb. Equifinality lies in the fact that there might be multiple switches that can possibly control the same light. Discuss what would be the analogy in case study work of “turning on or off” the switch (within cases or between cases). What about counterfactuals? (Thanks to Mike Desch for suggesting this analogy)
14. Should one assume an interaction term or just a straight additive model, or a Boolean model for the data in the table below? Table 2 is a stripped-down version of their table 2 (p. 88) which gives the two core independent variables: (1) federal versus centralized state and (2) multiparty system versus two-party

system. I use their primary dependent variable “macrocorporatism” (the other one they discuss is “sector coordination”). There is no statistical analysis in this article; the empirical analysis is carried out via four case studies, one from each cell in table 2.

Table 1: Macrocorporatism

Number of Parties	Level of State Centralization	
	Centralized	Federal
Multiparty	Denmark macrocorporatism=.72	Germany macrocorporatism=.50
Two party	Britain macrocorporatism=-.14	United States macrocorporatism=-.93

Source: Martin and Swank 2011, table 2.

Answer:

As in almost all two-variable models - i.e., $X_1 \text{ AND } X_2 \rightarrow Y$ - the (1,1,1) cell is clear as is the (0,0,0) cell. The critical feature that will influence the decision between a QCA interpretation against an additive linear one is what happens with the cases where one independent variable is present and the other is absent, i.e., (1,0) or (0,1).

In set theoretic models the value of the (1,0) and (0,1) cells would be close to that of (0,0) because of the necessary condition relationship. The additive model suggests that when one independent variable is present and the other absent we should see intermediate results, somewhere between the extreme values on the dependent variable. Hence, a signal that the additive relationship is at work is when the dependent variable is significantly greater than the (0,0) but yet significantly less than the (1,1) dependent variable value. This is in fact what we find in table 2. The two off-diagonal cells have values in between those in the on-diagonal cells.

It is pretty clear that a set theoretic interpretation of these data would not be appropriate because of the intermediate values of the dependent variable when only one independent variable is present. However, it is very difficult to make any strong conclusions regarding whether there should be an interaction term.

15. In a very influential article Alesina and Spolaore (1997 On the size and number of nations. *Quarterly Journal of Economics*) give a formal model. Discuss this in terms of game theory multimethod research. For example, how plausible are their assumptions? What is the causal mechanism and how would you explore that in case studies? You can explore this in more detail in their book on the topic.

Answer:

For example, they do not discuss war which is historically probably the most important determinant of the size of nations.

16. Norris in *Making Democratic Governance Work* is interested in the impact of governance and/or democracy on a variety of outcomes, e.g., economic growth, welfare, and conflict. She also uses case studies to illustrate her findings and approach. In the various chapters on various dependent variables she uses paired comparisons. Discuss how she decides about these pairs focusing on the problem that she always has two independent variables – governance and democracy – in each chapter. For example, does she use the Avoid Overdetermination Guideline?
17. Copeland (2015) has at the core of his book an interaction, positive levels of economic interdependence (often trade) interacted with expectations about future economic conditions. Discuss the situation where one of the interaction terms is basically a subset of the other. For example, what case studies we be appropriate? Is the superset variable (positive economic independence) more like a scope condition?

To determine whether the liberal prediction or realist prediction will prevail, we must introduce an additional causal variable—namely, a state’s expectations of the future trade and investment environment. When a dependent state has positive expectations about this future environment, it is more likely to see all the benefits of continuing the current peace and all the opportunity costs of turning to war. Economic interdependence would then be a force for peace. Yet if a dependent state has negative expectations about the future economic environment—seeing itself being cut off from access to foreign trade and investment, or believing that other states will soon cut it off—then the realist logic will kick in. Such a state will tend to believe that without access to the vital raw materials, investments, and export markets needed for its economic health, its economy will start to fall relative to other less vulnerable actors. If this economic decline is anticipated to be severe, the leaders of the dependent state will begin to view war as the rational lesser of two evils—that is, as better than allowing their state to fall to a point where rising states can attack it later or coerce it into submission. (Copeland 2015, 2; basic hypothesis of the book)

18. At the core of Weeks’s book is a two-dimensional typology. Discuss whether or not there is or should be an interaction between the row and column variables.

TABLE 1.1 Typology of authoritarian regimes

	Civilian audience or leader	Military audience or leader
Nonpersonalist (Elite-constrained leader)	Machine	Junta
Personalist (Unconstrained leader)	Boss	Strongman

Answer:

In general one cannot always tell, for example, in the *Multimethod research, causal mechanisms, and case studies: an integrated approach* the Ansell example has no interaction term. In Weeks’s case the statistical analyses do include an interaction term.

19. Seawright (2016) argues for “extreme on X ” case selection in multimethod research. Extreme on X could mean very high or very low or distant from the mean. Contrast that with “good” causal mechanism case selection as argued in *Multimethod research, causal mechanisms, and case studies: an integrated approach*, i.e., some extreme cases are good cases and others are not good cases.
20. Bush (2011) is one of the relatively rare statistical multimethod articles, which chooses a case study based on the statistical results. Her case study is Afghanistan:

A case study can check the results’ robustness through process tracing... Since the preliminary large- N analysis generated satisfactory results for my theory, I chose Afghanistan—a country that was well-predicted by the statistical model (footnote: Lieberman 2005, 442–43. The average residuals for Afghanistan from Model 4 in Table 2 were -0.03) (Bush 2011, 126)

Discuss the pro’s and con’s of this as a good on-line case study – in the qualitative logic sense as well as in the statistical multimethod sense.

21. Collier and Sambanis (2005) conducted a large multimethod project on civil war and case studies. Explore their rationale for selecting cases to analyze since they cannot look at all countries for all time periods.
22. When doing statistical multimethod work scholars often choose “theoretical on-line” cases, i.e., cases where the theory is working (aka (1,1) cases, assuming a positive relationship). Construct an example where the theoretical on-line case is one which is not on the regression line, and which has a very large positive residual vis-à-vis the regression line.

Answer:

The ideal theoretical on-line case would lie in the top right hand corner (i.e., $X = 1$ and $Y = 1$, assuming variables $[0,1]$). Draw a regression line with a modest slope (e.g., .25). Cases in the top right corner will have large positive residuals.

Causal mechanisms, constraint mechanisms, interactive mechanisms

23. Fearon and Laitin in their oft-cited work (2003) on civil war (in)famously include a variable on amount of mountainous terrain (see Collier and Hoeffler 2004). This is controversial in terms of causal inference because it essentially does not vary within countries. Influential causal inference scholars deny causal status to variables which cannot be manipulated. Discuss how one use large- N qualitative case studies to explore the causal mechanism linking mountainous terrain to civil war. Can this illustrate how a constant can be part of a causal mechanism?
24. Soifer (2012) explores the concept of critical juncture along with critical antecedents in the case of import substitution policies in Latin America.

The distinct feature of a historical juncture with the potential to be critical is the loosening of the constraints of structure to allow for agency or contingency to shape divergence from the past, or divergence across cases... we must distinguish between two types of causal conditions at work during

the critical juncture: the permissive conditions that represent the easing of the constraints of structure and make change possible and the *productive conditions* that, in the presence of the *permissive conditions*, produce the outcome or range of outcomes that are then reproduced after the permissive conditions disappear and the juncture comes to a close. The two types of conditions are nearly always framed as separately necessary and jointly sufficient for divergence to occur. (Soifer 2012, 1573)

They [Slater and Simmons 2010] define a critical antecedent as “factors or conditions preceding a critical juncture that combine in a causal sequence with factors operating during that juncture to produce a divergent outcome” (p. 889) They write that the critical antecedent “does not produce its causal effect by causing the independent variable to emerge. It does so by helping to determine the differential causal effect of the independent variable across cases when the critical juncture exogenously comes about” (p. 891). Here we see that the critical antecedent is, in their formulation, unrelated to the permissive condition, which (for them) emerges exogenously. Permissive conditions are also distinct from critical antecedents in that although the former mark the temporal bounds of the critical juncture, the latter are operant *before* the juncture emerges. On the other hand, critical antecedents are connected to the productive condition. (Soifer 2012, 1576)

Draw a causal mechanism figure for the table below.

Table I. Inward-Looking Industrialization as a Critical Juncture

Critical antecedent	Strength of middle class and labor as of 1929
Permissive condition	Collapse of world trade and economic challenges of Great Depression and World War II
Productive condition	Economic ideas of ECLA and more general rise of economic nationalism
Outcome	Inward-looking industrialization implemented to varying degrees in Latin America
End of critical juncture	Recovery of world trade by 1950, and especially after the Korean War
Mechanisms of reproduction	New political coalitions among bureaucrats, domestic elites, and organized labor
Consequences	Crises of populist rule and bureaucratic-authoritarian regimes (O'Donnell, 1973)

25. Slater and Simmons (2010) provide quite a few causal mechanism figures, such as

Figure 2. McAdam on King Cotton and Black insurgency

Figure 3. Grzymała-Busse on Communist Party regeneration

Figure 4. Family law and gender inequality in North Africa.

Figure 5. The Colliers on labour incorporation in Latin America

Figure 6. Luebbert on interwar European regime outcomes

Figure 7. Kalyvas on Christian Democratic parties in Western Europe

Figure 8. Regime outcomes in Central America [Yashar, Mahoney]

Figure 9. Ethnic violence in India [Varshney, Wilkenson, Kohli]

Figure 10. Racial politics in Brazil and South Africa [Marx, Lieberman]

Discuss these causal mechanism figures. For example, Do the arrows all mean the same thing? Are some of the ellipses necessary conditions? What are the causal connections between text with boxes in front of them and the ellipses?

For example, here is the McAdams figure.

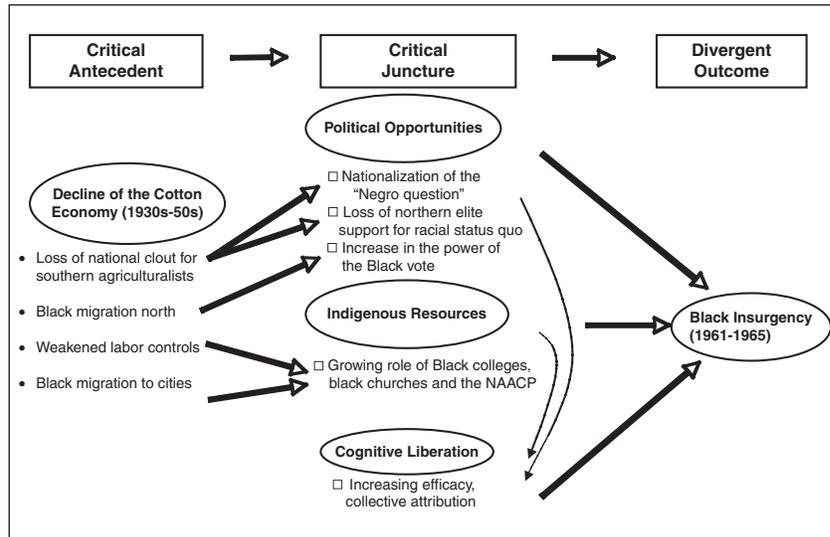


Figure 2. McAdam on King Cotton and Black insurgency

26. Collier and Collier (1991) is a class of comparative historical analysis. Central to their work is labor incorporation. Discuss their case selection on this variable and whether it should be a partially a scope condition.

Because their interest is in the effects of labor incorporation, they [Collier and Collier 1991] consider only the effects of variation in the productive condition: all eight of their cases saw labor incorporated into politics after a major social crisis in the early 20th century. Their interest is in the ways in which different “values” of the productive condition shape divergent regime outcomes over subsequent decades Since the permissive condition of the rise of labor bounds the theory of regime dynamics that they develop, it acts as a scope condition on the proposed relationship between the mode of labor incorporation and regime outcomes. (Soifer 2012, 1581-82 meth570.tex)

Here is the Slater and Simmons figure. Note that labor incorporation appears in both paths.

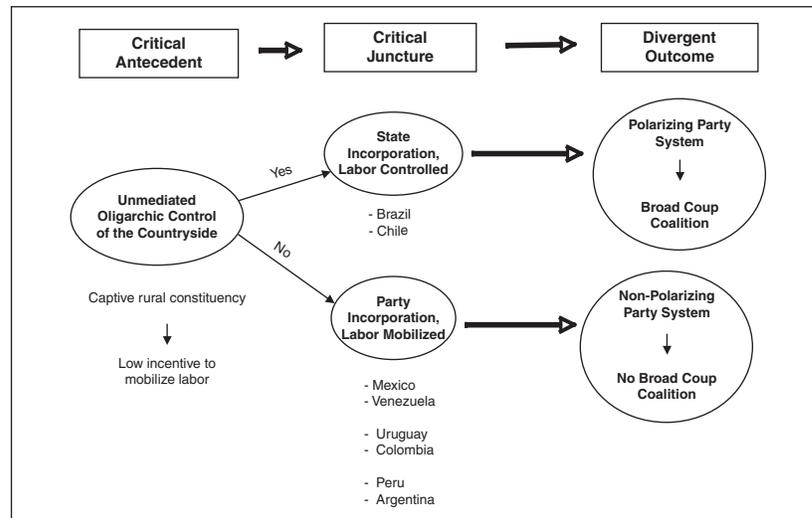


Figure 5. The Colliers on labour incorporation in Latin America

27. Discuss Huber and Stephens' (2012) case selection strategy, particularly its longitudinal variation on X and Y. Did they choose cases that were (1,1) cases at some point in their history? Note as well that their core theory involves an interaction term.

Of the various purposive strategies, we follow Ragin's (1987, 2000, 2008) advice to focus on the positive outcome cases, so we select all cases that had high values on the dependent variable as of 1980.¹⁹ This fits Goertz's (2008) admonition to choose diversely among positive outcome cases and Lieberman's (2005, 444) to select for wide variation in the explanatory variables among the cases that fit the theory according to the quantitative analysis. (49-50)

28. Mansfield and Pevehouse (2000) give a variety of mechanisms that could link preferential trade agreements to reduce military conflict. Do a causal mechanism graph of their theory (like those in chapter 2 of *Multimethod research, causal mechanisms, and case studies: an integrated approach*, note that the core hypothesis is an interaction term between trade and PTA membership. A similar exercise can be done with the causal mechanisms leading from common IGO membership to less international conflict: "Indeed, a close look at various international organizations indicates they may serve any of six functions: coercing norm breakers; mediating among conflicting parties; reducing uncertainty by conveying information; problem-solving, including expanding states' conception of their self-interest to be more inclusive and long-term; socialization and shaping norms; and generating narratives of mutual identification. (Russett et al. 1998, 444-45). Discuss whether these "functional" arrows in the causal mechanism diagram should be interpreted as causal.
29. Discuss the causal figures in *Multimethod research, causal mechanisms, and case studies: an integrated approach*, Weller and Barnes (2014) or Waldner (2014)

from a DAG cross-case, large-N, probabilistic perspective. Are these figures identified from a DAG perspective (e.g., Morgan and Winship 2015). Does it matter from a within-case causal inference perspective if they are not?

30. Grzymała-Busse (2007) is a core example in the causal mechanism chapter of *Multimethod research, causal mechanisms, and case studies: an integrated approach*. In my figure 2.4 of her theory “Robust competition” is constituted by three mechanisms (1) moderation, (2) anticipation, and (3) cooptation. Discuss how one might aggregate or combine these causal mechanisms (e.g., OR, AND, addition). Does she supply hints about this?

31. Different causal mechanisms and control variables. Sometimes it is not clear whether something is a separate causal mechanism (e.g., separate X) or whether it is part of some larger causal mechanism, i.e., an M_i factor. For example, Simmons and Elkins (2004) in a widely cited article discuss various mechanisms of policy “diffusion.” (I use the scare quotes because it is not clear that they are all diffusion mechanisms, not other kinds of mechanisms, e.g., market competition.) They contrast three theories about why states adopt liberal economic policies. The first is via market competition, if competitor nations are adopting liberal policies and the state adopts to compete in markets. A second mechanism is global norms about economic policies. A third is learning from networks, successful states, or culturally similar states. There are independent variables in their statistical model representing each of these mechanisms. So should these independent variables be considered separate mechanisms, e.g., separate X_i or M_i within a larger theory of diffusion?

32. The \rightarrow in causal mechanism figures is often ambiguous. Sometimes it can mean a noncausal relationship. What would be some situations where this is the case?

Answer:

One set of situations is where the arrow is ontological or definitional in nature. Another is game trees or other decisionmaking figures where the arrows indicate different choice options.

33. Discuss the Rodrik (2007) figure below. Note that everything is conceptualized as a constraint (see chapters 2 and 4 of *Multimethod research, causal mechanisms, and case studies: an integrated approach*). Which case studies would be useful? Which ones does he do? Discuss the nature of the arrows - e.g., are they causal - and the two-level structure of the causal mechanism. Could the arrows be casually going up instead of down?

Moving down the branches of the decision tree is tantamount to discarding candidates for the most binding constraint on growth. The overarching lesson from our theoretical analysis is that it is this constraint, once identified, that deserves the most attention from policymakers. (Rodrik 2007, 66)

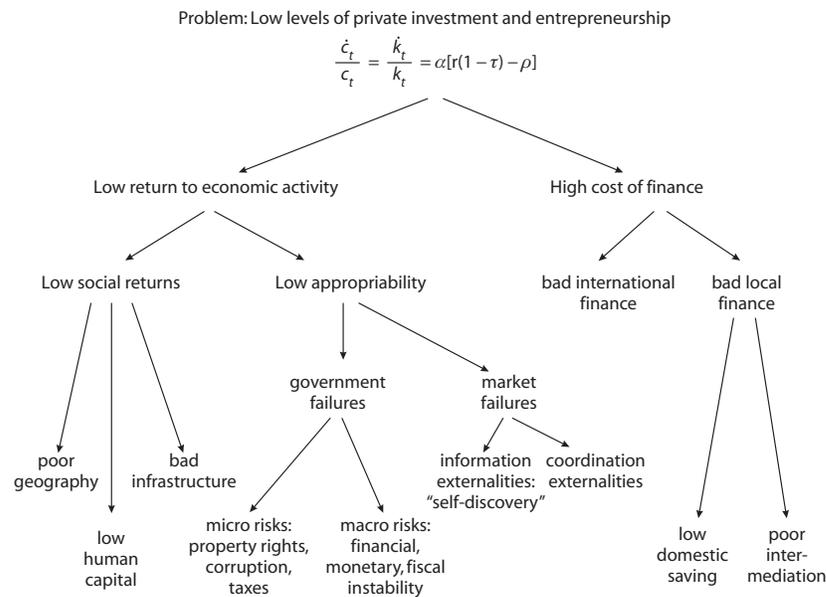


Fig. 2.1. Growth diagnostics

Two cultures

34. In the *Two cultures* book a key methodological point is causal asymmetry. Hafner-Burton's (2014) review article does not talk about authoritarian regimes as a source of human rights abuses, while she talk about democracy as a cause of the respect of human rights. Discuss this causal asymmetry.

"The central insight about state institutions is that, while fully developed democracy may be the best hope for the promotion and protection of human rights, efforts to transition to and institutionalize democracy often incite violence, and the alternatives to democracy are not all equally adverse for human rights." (Hafner-Burton 2014, 275)

35. Blainey in his oft-cited book (1973) argues for causal symmetry in understanding war and peace. Discuss. For an opposing view see Goertz et al. *The puzzle of peace: the evolution of peace in the international system* where the final chapter argues for asymmetry.

the causes of war and peace, logically, should dovetail into one another. A weak explanation of why Europe was at peace will lead to a weak explanation of why Europe was at war. A valid diagnosis of war will be reflected in a valid diagnosis of peace. (p. 3)

War and peace appear to share the same framework of causes. The same set of factors should appear in explanations of the outbreak of war; widening of war by the entry of new nations; outbreak of peace; surmounting crises during a period of peace; and, of course, the ending of peace. (p. 293)

Wars usually end when the fighting nations agree on their relative strength, and wars usually begin when fighting nations disagree on their relative strength. Agreement or disagreement is shaped by the same set of causal factors. Thus

each factor that is a prominent cause of war can at times be a prominent cause of peace. (p. 122)

36. Discuss Pahre's claim that necessary conditions violation common statistical assumes: "Third, necessary conditions violate the unit homogeneity assumption common in statistics, which states that 'if two units have the same value of the key explanatory variable, the expected value of the dependent variable will be the same' (King et al., 1994: 116). Necessary conditions violate this condition because observations x, y and $x, \text{not-}y$ are both consistent with the necessary condition $x \leftarrow y$; in other words, x may occur with or without y " (Pahre 2005, 131).

Large-N qualitative testing and medium-N designs

37. Fearon and Laitin in their oft-cited work (2003) on civil war (in)famously include a variable on amount of mountainous terrain (see Collier and Hoeffler 2004). This is controversial in terms of causal inference because it essentially does not vary within countries. Influential causal inference scholars deny causal status to variables which cannot be manipulated. Discuss how one use large-N qualitative case studies to explore the causal mechanism linking mountaineous terrain to civil war. Can this illustrate how a constant can be part of a causal mechanism?
38. The medium-N paradigm means in this context exploring cases in border areas of the (1,1) zone as secondary case studies. For the democratic peace this would be borderline democracies or borderline peace (in the joint democracy is sufficient for peace version of the democratic peace). An interesting exercise to see what the cases scholars have used when critiquing of the democratic peace, e.g., Elman (1997) or Rosato (2003).
39. Large-N qualitative testing. Analyze this example of large-N qualitative testing.

In the replicated version of Schultz's data set, there are 147 democratic victories—that is, unreciprocated MIDs initiated by democracies. Of these episodes, Table 2 lists the twenty-five most influential cases as measured by the $df\beta$ statistic, which reports the change in the coefficient of interest when an individual case is excluded from the regression. These twenty-five cases—roughly 2 percent of the overall data set—exert the greatest downward impact on the democratic initiator variable, in effect doing the most work to confirm the predictions of the democratic credibility hypothesis. The empirical analysis in *Democracy and Coercive Diplomacy* relied on the MID data set because, according to the study, the data set is composed of "cases in which states used threats of force, regardless of how prominent or how severe the ensuing crisis eventually became." If true, the data set would indeed be useful for testing the democratic credibility hypothesis, because the theory aims to explain the success and failure of militarized threats. However, this characterization of the MID data set is largely incorrect. Our research indicates that none of the twenty-five most influential democratic victories in our replication of Schultz's analysis represents an actual threat made by a democracy. In fact, as Table 2 reports, eight of the twenty-five cases appear to involve no militarized dispute at all. The remaining cases entail unilateral raids, skirmishes, or border violations (twelve cases!, troop

movements or exercises without a coercive demand (two cases), and encounters with fishing boats or other civilian vessels (three cases!). Because these cases do not involve coercive threats, they do not belong in an empirical test of democratic credibility theory. (Downes and Sechser 2012, 468)

40. Large-N qualitative testing and multimethod research more generally involves looking for evidence of the causal mechanism in cases. Discuss Simmons and Danner (2011, 235) where the number of (1,1) cases is manageable, but they cannot find much qualitative evidence.
41. Copeland in his analysis of causal importance of economic interdependence and future expectations looks all cases of major power crisis and war: “In this book, I look at the onset of essentially all the significant great power crises and wars from 1790 to 1991” (2015, 76). In the context of large-N qualitative testing, discuss the advantages and disadvantages of this Y-centric approach.
42. Levy and Thompson (2005) discuss the perhaps most classic hypotheses in international security: “threats of hegemony generate great-power balancing coalitions.” They define “balancing coalitions” as forming an alliance. Give the set theoretic version of their hypothesis (i.e., in terms of a sufficient condition hypothesis). In their analysis (below) they find that a significant χ^2 supports the hypothesis. Discuss the “absolute” hypothesis, i.e., sufficient condition hypothesis versus the “relative hypothesis”, i.e., χ^2 . Do the data support the absolute hypothesis? Connect this with large-N qualitative testing discussed in *Multimethod research, causal mechanisms, and case studies: an integrated approach*.

Table 2
CAPABILITY CONCENTRATION AND ALLIANCE RESPONSE AGAINST THE LEADING
POWER, 1495–1999

	Weaker relative position (less than 33%)	Stronger relative position (33% or greater)
No alliance response	151 (.702)	104 (.452)
Alliance response	64 (.298)	126 (.548)
<u>N = 445</u>	215 (1.000)	230 (1.000)

$\chi^2 = 28.42; p = .000$

Note: The years in which the state exceeded 33 percent of capability shares are indicated in parentheses in the “leading land power” column.

Answer:

Sufficient condition hypothesis: “If threat of hegemony then great powers form balancing coalitions.” The absolute hypothesis is not strongly supported since if there is capability concentration there is balancing only 55 percent of the time. The relative hypothesis compares that to the 30 percent in the “weaker relative position” which generates a significant χ^2 . Large-N qualitative testing typically uses absolute tests.

QCA, set theory, Boolean algebra, fuzzy logic

43. Walter's oft-cited book on the peaceful settlement of civil wars makes much use of necessary or sufficient conditions both in hypotheses and the data analysis. Discuss how she mixes the two. For example, "three sections follow. The first section tests whether third-party security guarantees and power-sharing pacts are necessary in combination to bring a peaceful solution to war. The data reveal that civil wars are significantly more likely to end in a successfully implemented settlement if both types of guarantees are present" (Walter 2003, 92).
44. Discuss the "light-switch" analogy as a way to think about process tracing and equifinality. The basic analogy is that the light-switch is on and the light is on (essentially the (1,1) cases). Discuss process tracing as following electricity through various junction boxes to the light bulb. Equifinality lies in the fact that there might be multiple switches that can possibly control the same light. Discuss what would be the analogy in case study work of "turning on or off" the switch (within cases or between cases). What about counterfactuals? (Thanks to Mike Desch for suggesting this analogy)
45. Should one assume an interaction term or just a straight additive model, or a Boolean model for the data in the table below? Table 2 is a stripped-down version of their table 2 (p. 88) which gives the two core independent variables: (1) federal versus centralized state and (2) multiparty system versus two-party system. I use their primary dependent variable "macrocorporatism" (the other one they discuss is "sector coordination"). There is no statistical analysis in this article; the empirical analysis is carried out via four case studies, one from each cell in table 2.

Table 2: Macrocorporatism

Number of Parties	Level of State Centralization	
	Centralized	Federal
Multiparty	Denmark macrocorporatism=.72	Germany macrocorporatism=.50
Two party	Britain macrocorporatism=-.14	United States macrocorporatism=-.93

Source: Martin and Swank 2011, table 2.

Answer:

As in almost all two-variable models - i.e., $X_1 \text{ AND } X_2 \rightarrow Y$ - the (1,1,1) cell is clear as is the (0,0,0) cell. The critical feature that will influence the decision between a QCA interpretation against an additive linear one is what happens with the cases where one independent variable is present and the other is absent, i.e., (1,0) or (0,1).

In set theoretic models the value of the (1,0) and (0,1) cells would be close to that of (0,0) because of the necessary condition relationship. The additive model

suggests that when one independent variable is present and the other absent we should see intermediate results, somewhere between the extreme values on the dependent variable. Hence, a signal that the additive relationship is at work is when the dependent variable is significantly greater than the (0,0) but yet significantly less than the (1,1) dependent variable value. This is in fact what we find in table 2. The two off-diagonal cells have values in between those in the on-diagonal cells.

It is pretty clear that a set theoretic interpretation of these data would not be appropriate because of the intermediate values of the dependent variable when only one independent variable is present. However, it is very difficult to make any strong conclusions regarding whether there should be an interaction term.

46. Copeland (2015) has at the core of his book an interaction, positive levels of economic interdependence (often trade) interacted with expectations about future economic conditions. Discuss the situation where one of the interaction terms is basically a subset of the other. For example, what case studies we be appropriate? Is the superset variable (positive economic independence) more like a scope condition?

To determine whether the liberal prediction or realist prediction will prevail, we must introduce an additional causal variable—namely, a state's expectations of the future trade and investment environment. When a dependent state has positive expectations about this future environment, it is more likely to see all the benefits of continuing the current peace and all the opportunity costs of turning to war. Economic interdependence would then be a force for peace. Yet if a dependent state has negative expectations about the future economic environment—seeing itself being cut off from access to foreign trade and investment, or believing that other states will soon cut it off—then the realist logic will kick in. Such a state will tend to believe that without access to the vital raw materials, investments, and export markets needed for its economic health, its economy will start to fall relative to other less vulnerable actors. If this economic decline is anticipated to be severe, the leaders of the dependent state will begin to view war as the rational lesser of two evils—that is, as better than allowing their state to fall to a point where rising states can attack it later or coerce it into submission. (Copeland 2015, 2; basic hypothesis of the book)

47. Levy and Thompson (2005) discuss the perhaps most classic hypotheses in international security: “threats of hegemony generate great-power balancing coalitions.” They define “balancing coalitions” as an forming an alliance. The sufficient condition hypothesis: “If threat of hegemony then great powers form balancing coalitions.” Make the data in the table below such that they would pass the QCA criterion for sufficient condition hypotheses. Then change the data so that the data (1) are a trivial sufficient condition hypothesis, (2) nontrivial sufficient condition hypothesis, and (3) nontrivial but with the relationship in the wrong direction.

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Note: The years in which the state exceeded 33 percent of capability shares are indicated in parentheses in the “leading land power” column.

Answer:

A percentage of 80 percent or higher in the alliance formation column, would pass the QCA bar which is usually around 70–80 percent. For a trivial sufficient condition, make the percentage in the left-column the same as in the right. For nontrivial making it significantly lower, e.g., 50 percent. For nontrivial in the wrong direction make the percentage in the left-hand column around 95 percent.

48. Levy and Thompson (2005) discuss the perhaps most classic hypotheses in international security: “threats of hegemony generate great-power balancing coalitions.” They define “balancing coalitions” as forming an alliance. Give the set theoretic version of their hypothesis (i.e., in terms of a sufficient condition hypothesis). In their analysis (below) they find that a significant χ^2 supports the hypothesis. Discuss the “absolute” hypothesis, i.e., sufficient condition hypothesis versus the “relative hypothesis”, i.e., χ^2 . Do the data support the absolute hypothesis? Connect this with large-N qualitative testing discussed in *Multimethod research, causal mechanisms, and case studies: an integrated approach*.

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49. Clarke gives an excellent discussion of the logic and methodology, in particular the common logical error of affirming the antecedent. Explain how the Avoid Overdetermination Guideline tries to deal with this by eliminating “other mortal creatures.”

The invalid argument is a logical fallacy known as “affirming the consequent.” Consider the following invalid deduction: If x is human, then x is mortal [therefore] If x is mortal then x is human. Obviously, not all mortal creatures are humans. Despite the fact that x is mortal, we cannot conclude that x is human. . . . The problem with affirming the consequent is that there are numerous conditions that imply that a thing is mortal, and being human is simply one of them. In the example given above, for instance, x could be a cat, a dog, or even a dandelion, and observing that “x is mortal” does not give us warrant to conclude that any particular one is true. (Clarke 2007, 888)

Answer:

The Avoid Overdetermination Guideline selects cases where alternative “mortals” variables are zero. If one had a complete list of mortal beings and applied the Avoid Overdetermination Guideline ($Z = 0$) then the only possible case selection options left are humans.

50. One reason why qualitative methods (based on logic and set theory) are different from statistical methods is because most statistics use linear algebra while set theory is based on Boolean algebra. One difference between Boolean and linear algebra is that Boolean algebra requires a second distributive law: $a + (b * c) = (a + b) * (a + c)$. Explain why this does not hold for linear algebra. Explain via Venn diagrams why this works for sets (see Hohn, F. E. (1966). *Applied Boolean Algebra: An Elementary Introduction* for an introduction to Boolean algebra). Thanks to Alrik Thiem for this exercise.

Answer:

The second distributive law can be neatly visualized for sets with two Venn diagrams of three overlapping circles each. The law says . The left hand-side of the equation marks the whole of “a” plus the intersection of “b” and “c,” and the right hand-side will mark exactly the same region.

51. Since students in the social sciences are not taught basic mathematical logic it is easy to make errors. Explain the logical error in the following descriptions of the democratic peace:

Immanuel Kants argument that democratic institutions . . . are a necessary condition for peace has been empirically substantiated. (Risse-Kappen 1996, 366)

The recent flurry of studies of the theory of the “democratic peace” follows upon Kant’s argument that a necessary condition for peace between states is constitutional republics. (Holsti 1996, 180)

Answer:

The authors have confused a necessary condition with a sufficient condition. The democratic peace says that joint democracy is sufficient for peace.

52. It is not too hard to make mistakes when manipulating necessary and sufficient conditions. Schweller (1992) manages with the hypotheses below to be both redundant and contradictory. Explain.

1. A power transition involving a declining democratic leader is both a necessary and sufficient condition for the absence of preventive war. 1a. When a declining democratic leader confronts a rising democratic challenger, accommodation results. 1b. When a declining democratic leader confronts a rising nondemocratic challenger, the leader tries to form a defensive alliance system to counterbalance the threat. 2. A power transition involving a declining nondemocratic state is a necessary but not sufficient condition for a preventive war, regardless of the regime type of the challenger. (Schweller 1992, 248–49)

Answer:

Hypothesis 1 stipulates that, given a power transition and a declining leader, (a) the leader’s democracy is necessary for the absence of war and (b) the leader’s democracy is sufficient for the absence of war. Hypothesis 2 stipulates that the leader’s nondemocracy is necessary for war. Since there are only two kinds of leaders, democratic and nondemocratic, and since necessary and sufficient conditions are fungible via the contrapositive operation, stating that the leader’s democracy is sufficient for the absence of war is logically equivalent to stating that the leader’s nondemocracy is necessary for the presence of war: if $P(Y|X) = 0$, then $P(\neg Y|\neg X) = 1$. Therefore, the assertion in Hypothesis 2 that nondemocracy is necessary for war is already implied by Hypothesis 1. On the other hand, Hypothesis 2 specifically states that, given a power transition and a declining leader, the leader’s nondemocracy is not sufficient for preventive war. Translating this statement into necessary-condition terms yields the statement, “The leader’s democracy is not necessary for the absence of preventive war.” Hypothesis 1 makes the claim that democracy is necessary for the absence of war. Hypothesis 2, therefore, merely restates one half of Hypothesis 1 and contradicts the other.

53. Express Przeworski et al.’s (2000) main conclusion regarding GDP/capita and democracy using the logic of necessary and sufficient conditions with (1) two independent variables, (2) as a sufficient condition, (3) with time coefficients, and (4) dependent variable involves authoritarianism.

Answer:

Minimum level of GNP/capita (time t) AND Democracy (time t) are jointly sufficient for no transition to authoritarianism (from time t onwards).

Notice how this orients theory toward to question of transitions to nondemocracy instead of transitions to democracy. What theory is there about transitions to authoritarianism?

54. Researchers often use set theoretic or necessary (or sufficient) condition language. For example, “all sociologists are Democrats” means sociologists are a *subset* of all democrats; which also means being a Democrat is a necessary condition for being a sociologist. Such language can be common but it is often not recognized as such. Take Lipset’s 1993 American Sociological Association Presidential address and find all examples of the use of logic (e.g., necessary condition) or set theory in hypotheses or discussions of empirical results (e.g., all sociologists are Democrats). Express these descriptive statements in terms of hypotheses about necessary or sufficient conditions.

Answer:

There are quite a few. For example, (1) “every country with a population of at least 1 million that has emerged from colonial rule and has had a continuous democratic experience is a former British colony” (Lipset 1993, 5, citing Weiner 1987), (2) “there has been no case of political democracy that has *not* been a market economy...” (Lipset 1993, 5, citing Berger 1992). Others can easily be found.

Here is how the logic works using a descriptive statement from Dahl (1971): “all highest-level [developed] countries are polyarchies” (Cited by Diamond 1992, 97).

- All highly developed (*Wealth*) countries are polyarchies (*Democracy*). (1)
- All *W* are *D*. (2)
- D* is necessary for *W*. (3)
- $\neg D$ is sufficient for $\neg W$ (“ \neg ” means “not”). (4)

Thus (3) or (4) are equivalent logical statements the express Dahl’s empirical findings.

55. The “democratic peace” idea is that democracies never fight wars with each other. This can be expressed as either a necessary condition hypothesis or a sufficient condition hypothesis. Give both hypotheses.
56. It is not uncommon to confuse necessary condition counterfactuals with sufficient condition ones. See Fenoaltea (1973) for a beautiful discussion of this in the context of economic history. How does the following quote illustrate that:

Immanuel Kant’s argument that democratic institutions ... are a necessary condition for peace has been empirically substantiated. (Risse-Kappen 1996: 366)

The recent flurry of studies of the theory of the ‘democratic peace’ follows upon Kant’s argument that a necessary condition for peace between states is constitutional republics. (Holsti 1996: 180)

Answer:

Fisher’s classic book on historical explanation discusses at some length this problem:

One common form of the reductive fallacy is the confusion of necessary with sufficient cause – the confusion of a causal component without which an effect will not occur, with all the other causal components which are required to make it occur. This sort of error appears in causal explanations which are

constructed like a single chain and stretched taut across a vast chasm of complexity. The classic example is the legendary battle that was lost for the want of a horseshoe nail; for the the want of a nail the shoe was lost, for the want of a shoe the horse was lost, for the want of a horse the rider was lost, for the want of a rider the message was lost, for the want of the message the regiment was lost, and for the want of a regiment the battle was lost. (Fischer 1970: 172; he then goes on to use the classic example of the battle of Antietam for which the accident loss of confederate orders to the North was a key factor in the North's victory)

Causal models and inference

57. Causal mechanisms and scope decisions can be closely related. Bush's main independent variables in her analysis of gender quotas are (1) foreign aid, (2) international election monitoring, and (3) democracy promoting UN peace operation. She could include all countries in her analysis, but she excludes rich democracies.

A Quantitative Analysis of the Sources of Gender Quotas. The Sample. The unit of analysis for the quantitative analysis of the determinants of quota adoption is the country-year. The sample covers the years from 1970 to 2006 and contains all countries except long-term consolidated and developed democracies. Long-term consolidated and developed democracies were removed because they are subject to different causal processes; they are neither under UN authority nor desirous of signaling their liberalism to the international community, and in fact, they promote democracy abroad. I followed Finkel et al. and removed thirty advanced industrial, long-term consolidated democracies, which resulted in a sample of 165 countries for at least some amount of time. (Bush 2011, 118)

She does include authoritarian regimes, because some do adopt gender quotas. Discuss whether the same causal mechanism works for authoritarian as well as democratizing regimes.

58. One potentially large issue is what might be called "conceptual endogeneity." This is where a secondary-level dimension is part of the dependent variable and also considered as an independent variable. There has been an explosion of studies of elections in hybrid democratic regimes. Should these elections be considered a *cause* of democratization? Does this conflict with the fact that freer and more competitive elections will change the democracy score of the country by definition? For example, "Scholars also disagree about the role of elections in promoting democratic change. (p. 12) While a familiar indicator of democratic progress, we must remember, electoral turnover does not always support democratic development. (p. 13) These issues lead to a final and more fundamental concern about attributing too much democratic influence to elections" (Bunce and Wolchik 2011, 14).
59. Big expansive concepts run the risk of what might called, causal-ontological tautology. Often it may be unclear if a given factor is part of the definition of the dependent variable, or a causal factor. Discuss Nathan's views (2006) on domestic instability as a cause or defining feature of a security community. Find

passages that make it seem like it is defining and find others where it is clearly causal.

60. As discussed at various points in *Two cultures* the set theoretic approach to causation is asymmetric. A variable might be good at explaining not- Y but weak at explaining Y . Take the following quotes and (1) formulate the strong generalization in terms of a necessary condition, (2) explain how asymmetry solves Hensel's constant independent variable problem to a large degree. Note that correlation between contiguity and militarized disputes and wars is considered one of the strongest in the international conflict literature:

5 percent of fatal disputes [aka MIDs] and 5 percent of full-scale wars between minor powers begin between adversaries that do not share a land or sea boundary. (Hensel 2012, 6)

In short, proximity increases the risk of armed conflict Proximity between states is basically a constant; countries rarely gain or lose borders over time. As a result the proximity explanation faces difficulties in accounting for the outbreak of rare events such as conflict and war, since a dependent variable cannot account for fluctuations in a dependent variable. (Hensel 2012, 8).

Answer:

Contiguity is a necessary condition for minor power wars.

Asymmetry arises because non-contiguity gives a very good explanation for the lack of severe militarized conflict, but does a poor job of identifying when wars actually break out. Notice that non-war is a almost constant for most dyads. This is of course the converse of the fact that wars are rare events. So both are very constant variables.

61. Recently statisticians have become much more concerned with problems of "unit homogeneity." Here is Henry Brady defining the idea:

We shall make the transformation of $Y_B(1, 0)$ into $Y_A(0, 0)$ in two steps which are depicted on Table 10.9. If A and B are identical and Z_A and Z_B [Z is the treatment] are identical as well (footnote: By saying that Z_A and Z_B have to be comparable, we mean that $Z_A = 0$ and $Z_B = 0$ are the same thing and $Z_A = 1$ and $Z_B = 1$ are the same thing.) (although we haven't indicated how this might be brought about yet) it might be reasonable to suppose that: $Y_B(1, 0) = Y_A(0, 1)$, [*Identicality of units and treatment or Unit Homogeneity*]. That is, A and B are mirror images of one another so that the impact of $Z_A = 1$ and $Z = 0$ on B is the same as the impact of $Z = 0$ and $Z = 1$ on A . (Brady 2008, 258)

Analyze how valid concepts are critical to the existence of unit homogeneity.

Answer:

Holland (1986) says "unit homogeneity" means that units are prepared carefully "so that they 'look' identical in all relevant aspects" (Holland 1986, 948). To be "identical" means that the concept must produce identical units, A and B in the Brady analysis. If a study looks at all "states" then the conceptualization of state means that there are no casually important differences in "stateness." Treatments, Z in the Brady analysis, also are assumed to be homogeneous. So if

democracy is an dichotomous independent variable that means that variations in democracy have no causal impact on the dependent variable.

Two-Level Theories

62. Horowitz (2010) chapter 2 presents a two-level theory. For the two core, basic level, independent variables of organizational capital and financial intensity. Draw a figure with ANDs and ORs (or with *'s and +'s for the linear algebra version) that represent the logical structure of his theory.
63. Discuss the Rodrik (2007) figure below. Note that everything is conceptualized as a constraint (see chapters 2 and 4 of *Multimethod research, causal mechanisms, and case studies: an integrated approach*). Which case studies would be useful? Which ones does he do? Discuss the nature of the arrows - e.g., are they causal - and the two-level structure of the causal mechanism. Could the arrows be casually going up instead of down?

Moving down the branches of the decision tree is tantamount to discarding candidates for the most binding constraint on growth. The overarching lesson from our theoretical analysis is that it is this constraint, once identified, that deserves the most attention from policymakers. (Rodrik 2007, 66)

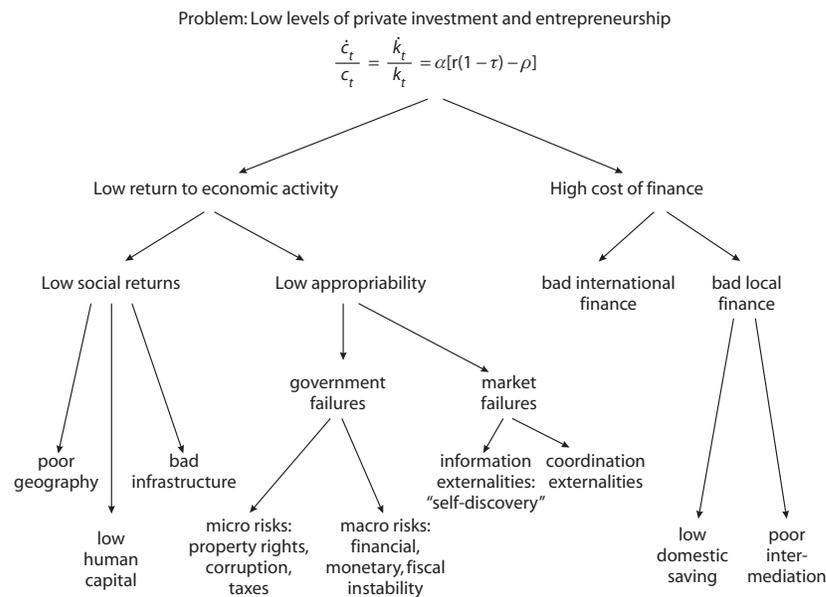


Fig. 2.1. Growth diagnostics

64. Volgy et al. (2008) is a nice example of an implicit three-level concept structure. Draw a figure of the concept. What are the dimensions and the structural principles used at each level?
65. State failure is the subject of much academic research as well as interest to policy organizations such as the World Bank and the Carnegie Endowment, not to

mention the large state failure project. One of the important risks with complex concepts such as “failed state” (see Iqbal and Starr 2009 for a review) is that some of the secondary-level dimensions of the concept may also be viewed as causes or effects of the phenomenon. Examine the various concepts of state failure and determine which might really be seen as causes or effects of state failure rather than the concept itself.

Answer:

For example, as Iqbal and Starr (2009, 316) state: “Specifically, most existing measures or indices of state failure incorporate a number of factors that may, in fact, be determinants of state collapse – such as civil strife and poverty.”

66. Ohlson (2008) “Understanding causes of war and peace” has implicit two-level theory. One might think that the basic level variables are the same, his “Triple-R” triangle for both causes of war and causes of conflict resolution, but that the secondary-level variables are different for each dependent variable. Discuss.
67. Tilly 2004 (particularly chapter 1) provides a rich variety of potential INUS and/or two-level models, for example:

The book’s most general claims follow: ... at least one of the processes under each of the first two headings (categorical inequality and trust networks) and *all* of the processes under the third heading (alterations of public politics) must occur for democratization to ensure. (Tilly 2004, 22).

Formalize his theories in terms of figures and/or INUS equations. This exercise also works well for Tilly’s account of other prominent theories (e.g., Rueschemeyer, Stephens, and Stephens 1992).

68. Kaufman (2006) provides an INUS model for explaining extreme ethnic conflict. Write the INUS formula for his model, discussing which variables are necessary condition and how sufficiency is achieved. Use the INUS model to explain why Kaufman argues that “peace,” i.e., no extreme ethnic conflict, is overdetermined (e.g., p. 56). See Bennett and George (2005) for a discussion of INUS models; the original source is Mackie (1980); Ragin’s methods produce in general INUS models.

Answer:

Here are the basic variables in Kaufman’s model:

Symbolist theory posits the following causal chain, but first, three preconditions for ethnic war are necessary: S1. Widespread group myths exist on both sides that explicitly justify hostility toward, or the need to dominate, the ethnic adversary. S2. Fear of group extinction is strong on both sides at the time violence breaks out. S3. Both sides have a territorial base and the opportunity to mobilize. Next, mobilization for violent conflict is driven by three processes: S4. Extreme mass hostility is expressed in the media and in popular support for the goal of political domination over ethnic rivals (on at least one side) or resistance to such domination. S5. Chauvinist elites use symbolic appeals to group myths, tapping into and promoting fear and mass hostility, to mobilize their groups for conflict. S6. A predation-driven security dilemma arises, in which the growing extremism of the leadership on at least one side results in radicalization of the leadership on the other.

These propositions together identify a causal mechanism. For the model to be correct, there must be evidence that in each case of ethnic war, the necessary preconditions not only were present but were causally important in enabling chauvinist mobilization and in causing a predation-driven security dilemma. Additionally, the logic requires that an explicitly genocidal policy must be based on explicitly eliminationist myths. (Kaufman 2006, 58)

One INUS model would be: $S1 * S2 * S3 * (S4 + S5 + S6)$.

“Peace” is overdetermined in the sense that if any of the necessary conditions, i.e., $S1-S3$ is absent then there is no conflict. Conflict is also absent if $(S4 + S5 + S6)$ is too small.

69. Compare Geddes’s (1993) figure of Skocpol’s theory to that in chapter 9 of social science concepts. Give two major differences between the two.

Answer:

(1) military threat, and substitutability of other causes of state breakdown and (2) problems with interaction term and her interest in “the” effect of military threat.

70. One important question is the extent to which two-level or fuzzy set models/methods differ from statistical ones. Examine Geddes’s (1993) figures 3.5 and 3.6. She finds no linear relationship between labor repression and economic growth. Draw a new horizontal and vertical through these figures which gives a 2×2 table that nicely supports the hypothesis that labor repression is a necessary condition for high economic growth.

Answer:

One can easily draw horizontal and vertical lines through her scatter plot to show that her data support the necessary condition hypothesis. Just draw a horizontal line at around 4% GDP growth and the vertical line at 1.5 labor repression.

71. Reformulate Doyle and Sambanis’s analysis (2000) of the effectiveness of UN peacekeeping in two-level terms.

Answer:

Basic level concepts are (1) international capacities, (2) hostility, and (3) local capacity. For secondary-level variables see page 783, in the section “The Explanatory Variables.”

“Thus, we theorize that the PB [peacebuilding] process is captured by: $PB = IC$ [International Capabilities]* NLC [Net Local Capacity].” (Doyle and Sambanis 2000, 782)

“All strategies should address the local sources of hostility, the local capacities for change, and the (net) specific degree of international commitment available to assist change. One can conceive of these as the three dimensions of a triangle whose area is the ‘political space,’ or effective capacity, for building peace. This suggests that the dimensions substitute for one another, that is, more of one substitutes for less of another; less extreme hostilities substitute for weak local capacity or minor international commitment.” (Doyle and Sambanis 2000, 781; see also the statistical model of table 4, p. 791)

72. Elman (2005) in his article on typological methods discusses the method of “indexing.” Using his discussion of Walt’s theory of alliance, explain how indexing can be the creation of a higher level variable/concept. How would the indexing he does fit into the varieties of two-level theories?

Answer:

“Threat” is composed of several secondary-level variables such as capability and proximity. By adding up the scores he is clearly using a family resemblance strategy.

73. Combine Walter (1997) and Hartzell and Hoddie (2003) to form a two-level theory of civil war conflict resolution. As basic-level variables use third-party guarantees and power-sharing. See Walter for an argument about the structural relationship between the two. (Note: you might assume the scope conditions that the countries have already started negotiations.)

Answer:

Walter (p. 351) clearly argues that there is substitutability between the two basic-level variables. Walter argues a necessary and sufficient condition view of credible commitments (though she is not completely explicit on this point). Hartzell and Hoddie clearly argue for a family resemblance perspective on power-sharing (p. 321).

74. What are the three “basic level” hypotheses in Skocpol’s *States and social revolutions* and which one of these is Geddes (2003) basically (though obviously not exactly) testing in her discussion of Skocpol?

Answer:

The three basic-level hypotheses are: (1) peasant revolt is necessary for social revolution; (2) state breakdown is necessary for social revolution; and (3) the combination of peasant revolt and state breakdown is sufficient for social revolution.

Geddes explores whether “external threat” is correlated with the occurrence of social revolution. She operationalizes external threat in terms of invasion and/or loss of territory. She also briefly explores the hypothesis that external threat is necessary for social revolution. Hence, Geddes examines whether one of Skocpol’s secondary-level variables for “state breakdown” is causally related to social revolution. Note that Skocpol herself hypothesizes that external threat affects social revolution by working through the basic-level variable of state breakdown.

75. Sekhon (2004) analyzed Skocpol’s theory of social revolution using statistical assumptions. Compare his analysis of Skocpol with the fuzzy-set analysis of Skocpol in chapter 9.

Answer:

Sekhon reassesses Geddes’s data from Latin America concerning the relationship between defeat in war and revolution. Contrary to Geddes, he concludes that these data do not rule out the possibility that the two factors are (probabilistically) related to one another. Hence, he concludes that Skocpol’s argument may be correct, if stated probabilistically.

By contrast, chapter 10 evaluates Skocpol's theory under the assumption that defeat in war is a secondary-level variable that affects social revolution only by working through the basic-level variable of state breakdown. Hence, from this perspective, Sekhon's reanalysis is not directly testing the theory developed by Skocpol.

76. Burawoy's (1989) critique of Skocpol shows how important, and how difficult, it is to see the complete causal structure of Skocpol's argument. His table 1 (p. 768) clearly divides variables into two levels and he correctly identifies peasant revolt and state crisis as the basic-level variables. However, he does not interpret the relationship between the secondary level and the basic level correctly. What is the nature of his error?

The task now is to show that both international pressure and an 'organized and independent dominant class with leverage in the state' were necessary ingredients for political crisis ... So far so good, but note immediately that the contrasting cases [Germany and Japan] do not demonstrate 'international pressure' as necessary for the development of a revolutionary political crisis. In the next chapter Skocpol examines the necessary conditions for the second component of revolution: peasant revolt ... She now has to demonstrate that both political crisis and peasant autonomy were necessary for peasant revolt. (Burawoy 1989, 766)

Answer:

Burawoy assumes that the secondary-level variables are necessary for the basic-level variables. However, the indicator/data-level variables are better characterized as individually sufficient for the basic-level variable.

77. Most and Starr introduced the influential notion of foreign policy substitutability (Most and Starr 1984; see also Most and Starr 1989). They are also well-known for the idea that opportunity and willingness are individually necessary and jointly sufficient for foreign policy action (Starr 1996). Put opportunity and willingness together with foreign policy substitutability to get the structure that Ostrom uses in her model of common pool resource institutions.

Answer:

If one puts opportunity and willingness at the basic level and foreign policy substitutability at the secondary level, one arrives at a two-level model. Cioffi-Revilla and Starr (2003) formally present this kind of model in a completely probabilistic fashion.

78. Interpret the following theories in two-level terms. Some may not be complete two-level models, in that the secondary-level may not always be clearly present for all basic-level factors.

(1) Marks, G. 1986. Neocorporatism, and incomes policy in western Europe and North America. *Comparative Politics* 18:253-77.

(2) Diehl, P., C. Ku, and D. Zamora. 2003. The dynamics of international law: the interaction of the normative and operating systems. *International Organization* 57:43-57.

(3) Jacoby, Wade. 2001. *Imitation and politics: redesigning modern Germany*. Ithaca: Cornell University Press.

- (4) Ertman, Thomas. 1997. *Birth of the leviathan: building states and regimes in medieval and early modern Europe*. Cambridge: Cambridge University Press.
- (5) Kingdon, John. 1984. *Agendas, alternatives, and public policies*. Boston: Little, Brown.
- (6) Linz, Juan J., and Alfred Stepan. 1996. *Problems of democratic transition and consolidation: Southern Europe, South America, and Post-Communist Europe*. Baltimore: The Johns Hopkins University Press.
- (7) Wickham-Crowley, Timothy. 1996. *Guerillas and revolution in Latin America: a comparative study of insurgents and regimes since 1956*. Princeton: Princeton University Press.
- (8) Burgerman, S. 2001. *Moral victories: how activists provoke multilateral action*. Ithaca: Cornell University Press.
- (9) Kugler, J., and A. Organski. 1989. The power transition: a retrospective and prospective evaluation. In M. Midlarsky (ed.) *Handbook of war studies*. Ann Arbor: University of Michigan Press. See also Lemke, D., and S. Werner. 1996. Power parity, commitment to change, and war. *International Studies Quarterly* 40:235–60.
- (10) Doner, R., et al. 2005. Systematic vulnerability and the origins of developmental states: Northeast and Southeast Asia in comparative perspective. *International Organization* 59:327–61.
- (11) Newman, K. 2005 *Rampage: the social roots of school shootings*, chapter 10. New York: Free Press. See also the special issue of *Sociological Methods & Research* in particular Harding, D., C. Fox, and J. Mehta (2002).

Answer:

The answers below are suggestive hints and avenues to pursue and do not constitute a complete answer to the question.

- (1) “The requisites of consensual incomes policy that have been discussed here, socialist participation in govern and centralized trade union structure, coincide only in the Nordic countries, the Low Countries, and Austria Without stable social democratic governance, consensual incomes policy is unlikely to be attempted, and without centralized trade unions, it is unlikely to be a viable policy in the medium term.” (Marks 1986, 269)
- (2) “A general theoretical argument focuses on four conditions. We argue that the operating system only responds to normative changes when response is “necessary” (stemming from incompatibility, ineffectiveness, or insufficiency to give the norm effect, and when the change is roughly coterminous with a dramatic change in the political environment (that is, “political shock”). We also argue, however, that opposition from leading states and domestic political factors might serve to block or limit such operating system change.” (Diehl et al. 2003, 71–72)
- (3) “Institutional transfer involves three necessary conditions: first, state elites refer explicitly to a model prominent in another place; second, they try to identify the foreign model’s legal framework and the actors that help it function; finally, these elites build a replica of all or part of the model.” (Jacoby 2001, 2)

“For institutional transfer to be effective, Jacoby says, two conditions have to be met: First, institutional transfer has to be supported by active segments of civil society, and second, flexibility in adapting institutions to foreign settings is essential Similarly, the politics of imitation faces higher obstacles when exact transfer is intended. A functional-equivalency approach, with its built-in elasticity, is preferable.” (Welsh 2002, 211; review of Jacoby 2001)

(4) “As the patrimonialist fate of Hungary and Poland illustrate, however, the mere presence of participatory local government is in itself not enough to ensure the triumph of bureaucratic constitutionalism. It is only the combination of participatory local government with a strong center equipped with independent capacities of rule that, the British case implies, can assure such an outcome.” (Ertman 1997, 324 (last page); note that the other key variable is timing of geopolitical competition, either preor post-1450).

(5) Kingdon’s model has three “streams” each of which is necessary and which together are jointly sufficient. His discussion is very clear about the different substitutable ways these streams can be filled.

(6) “Democracy is a form of government of a state. Thus, no modern polity can become democratically consolidated unless it is first a state. . . . If a functioning state exists, five other interconnected and mutually reinforcing conditions must also exist or be crafted for a democracy to be consolidated. First, the conditions must exist for the development of a free and lively civil society. Second, there must be a relatively autonomous and valued political society. Third, there must be a rule of law to ensure legal guarantees for citizens’ freedoms and independent associational life. Fourth, there must be a state bureaucracy that is usable by the new democratic government. Fifth, there must be an institutionalized economic society” (Linz and Stepan 1996, 7).

“Having analyzed the necessary conditions for a consolidated democracy and then spelled out the key differences among the four ideal-typical nondemocratic regimes, it should be clear that the characteristics of the previous nondemocratic regime have profound implications for the transition *paths* available Within the logic of our ideal types, it is conceivable that a particular authoritarian regime in its late stages might have a robust civil society, a legal culture supportive of constitutionalism and rule of law, a useable state bureaucracy that operates within professional norms, and a reasonably well-institutionalized economic society. For such a polity, the first and only necessary item on the initial democratization agenda would relate to political society—that is, the creation of the autonomy, authority, power, and legitimacy of democratic institutions. We argue in chapter 6 that Spain, in the early 1970s, approximated this position” (Linz and Stepan 1996, 55).

(7) Wickham-Crowley (1992) has a two-level model with the following structure:

- I. Peasant support
 - A. Agrarian structure
 - B. Agrarian disruption
 - C. Rebellious cultures
 - D. Peasant linkage (guerilla leaders have peasant ties, background)
- II. Guerilla/Government military strength

- A. Financing
- B. Internal solidarity
- C. Support from outside (e.g., Cuba, US)
- III. Regime weakness (see figure 8.1)
 - A. Weak cohesion of upper classes
 - B. Weak cohesion of middle classes
 - C. US occupation.
- IV. Existence of guerilla groups (this is added in Boolean analysis in chapter 12)

(8) Burgerman proposes “an interacting set of necessary conditions” for the success of human rights groups in forging peace agreements: the existence of relevant international norms and transnational activism; the existence of elites in the target state that have control over the armed forces and that have concern about their (country’s) international reputation; and the existence of organized domestic groups linking up with transnational activists. Added to these propositions is the sensible if unremarkable condition that “if a major power maintains overriding security or economic interests in the target state, it can inhibit the enforcement of human rights principles and agreements.”

(9) “Clearly, the necessary but not sufficient conditions for major war emerge only in the rare instances when power parity is accompanied by a challenger overtaking a dominant nation. The odds of a war in this very reduced subset are 50 percent. No other theoretical statement has, to our knowledge, reduced the number of cases to such a small set, and no other is so parsimonious in its explanatory requirements” (Organski and Kugler 1989, 179, see their table same page).

“More importantly, the power transition suggests that, during rare periods when a challenger overtakes the dominant nation, war will be waged only if the potential challenger is dissatisfied” (Organski and Kugler 1989, 51).

In particular, it is clear that there are various ways a country can be dissatisfied.

(10) “We contend that developmental states will only emerge when political leaders confront extraordinarily constrained political environments. Specifically, we argue that political elites will only build such institutional arrangements when simultaneously staring down the barrels of three different guns: (1) the credible threat that any deterioration in the living standards of popular sectors could trigger unmanageable mass unrest; (2) the heightened need for foreign exchange and war materiel induced by national insecurity; and (3) the hard budget constraints imposed by a scarcity of easy revenue sources. We call this interactive condition ‘systemic vulnerability’ ” (Doner et al 2005).

(11) Necessary conditions are very explicit. Two-level nature of theories comes out clearly in discussion and data in Appendix A. Substitutability is clear, particularly in footnote 2, page 372.

79. Reinterpret the following QCA analyses in terms of two-level theories:

(1) Stokke, O. 2004. Boolean analysis, mechanisms, and the effectiveness of international regimes. In A. Underdal and O. Young (eds.) *Regime consequences: methodological challenges and research strategies*. London: Kluwer.

(2) Blake, Charles H. and Jessica Adolino. 2001. The enactment of national health insurance: a Boolean analysis of twenty advanced industrial countries. *Journal of Health Politics, Policy and Law* 26:679–708.

(3) Snow, David and Daniel Cress. 2000. The outcomes of homeless mobilization: the influence of organization, disruption, political mediation, and framing. *American Journal of Sociology* 105:1063–1104.

Answers:

(1) In the Boolean equation $SUCCESS = A*i + A*S*R$ one can see “i” and “S*R” being easily interpretable in terms of costs of compliance. Hence there is substitute between them. A is a necessary condition already.

(2) For example, “National health insurance emerged and/or endured in three basic scenarios. First, given a receptive societal culture, a relevant leftist party, and a corporatist pattern of interest group activity, NHI existed regardless of the nature of the major political institutions. Second, unitary states with receptive cultures were capable of producing NHI in countries with weaker executives and in countries without a relevant labor party (irrespective of the nature of the other two independent variables). Third, Anglo-American societies with pluralist interest group environments adopted NHI with a dominant executive (regardless of the federal-unitary distinction or the relevance of labor parties).” (Blake and Adolino 2001, 696)

(3) Snow and Cress (2000) in their analysis of the success of homeless social movements find the same sort of pattern:

Six SMOs [social movement organizations] obtained positions on boards and task forces that addressed the homeless issue [dependent variable]. Two pathways led to this outcome. Organizational viability, diagnostic frames, and prognostic frames were necessary conditions for obtaining representation. These conditions were sufficient in combination with either disruptive tactics, where allies were present, or nondisruptive tactics, in the context of responsive city bureaucracies. (p. 1082)

Here too one sees the substitutability of power in the analysis. One needs either “allies” who are influential in the community *or* a friendly city government to begin with. You do not use disruptive tactics with friends, where you do if the city government is unfriendly.

80. Braumoeller (2003) has a large table giving many theories that use ANDs and ORs. Examine this list for other potential two-level theory candidates.

81. The Nussbaum example illustrates that one can think of many theories of (social) welfare and justice in the same structural terms as this book applies to concepts:

Most theories of justice can also be usefully analyzed in terms of the information used in two different-though interrelated-parts of the exercise, viz. (1) the selection of *relevant personal features*, and (2) the choice of *combining characteristics*. To illustrate, for the standard utilitarian theory, the only intrinsically important “relevant personal features” are *individual utilities*, and the only usable “combining characteristic” is *summation*, yielding the *total* of those utilities. (Sen 1992, 73)

Choose some well-known theories of justice or social welfare and describe the dimensions and the structuring principle.

Answer:

Sen gives the following examples:

Examples of selection of “relevant personal features” other than utilities include *liberties* and *primary goods* (Rawls 1971), *rights* (Nozick 1974), *resources* (Dworkin 1981), *commodity bundles* (Foley 1967; Pazner and Schmeidler 1974; Varian 1974, 1975; Baumol 1986), and various *mixed* spaces (Suzumura 1983; Wriglesworth 1985; Riley 1987)....

The selection of personal features has to be supplemented by the choice of a combining formula, e.g., *sum maximization* (Harsanyi 1955), *lexicographic priorities and maximin* (Rawls 1971; Sen 1977 “On weights and measures”), *equality* (Foley 1967; Nozick 1974; Dworkin 1981), or one of various *other* combining rules (Varian 1975; Suzumura 1983; Wriglesworth 1985; Baumol 1986; Riley 1987). (Sen 1992, 74)

82. Describe the three-level structure of Dasgupta’s concept of human well-being or destitution (Dasgupta 1990; Dasgupta and Weale 1992). What is its structure? What are the relative weights attached at the indicator and secondary levels? If you used Nussbaum’s approach how would you change the structure?

Answer:

The structure is very similar to the one used by Schmitter for corporatism, since it uses the sum of the ranks. The secondary-level level variables such as “health,” “education,” “wealth” will not be equally weighted in general unless they have the same number of indicators. More generally, is it reasonable to rank literacy equally with per capita income?

Regarding Nussbaum’s concept of human well-being, one would at the least take the minimum of the ranks between the secondary-level dimensions. At the indicator level one needs to consider the substitutability between factors. The sum might be a reasonable procedure.

83. Discuss the King and Murray’s measure of “human security”. (1) Compare their analysis to Nussbaum’s view of human well-being outlined in chapter 1. (2) Evaluate their claim that they do not need to justify their weights because they are not using any.

According to our definition, a person is in a state of generalized poverty whenever he or she dips below the pre-defined threshold in any of the component areas of well-being. Our dichotomization of each component of well-being is based on the belief that there is a qualitative difference in life experience above and below the threshold. For example, the difference between not having enough food and nutrition to survive and having enough food is fundamentally different from the difference between having enough food to survive and having food that also tastes especially good.

A key advantage of our definition of generalized poverty is that it does not require a set of weights to be developed to equalize the different domains of well-being. Since a person missing even one of these essential elements for any part of a year would be considered impoverished, the only arbitrary element in the definition is the threshold for each domain of well-being. Moreover, the policy world has much experience with choosing threshold

values for income and many other areas (such as to decide whether individuals qualify for certain programs). Although these thresholds are arbitrary and can be improved in theory in some ways (at the cost of simplicity), they are frequently used because they are fairly accurate reactions of peoples life experiences and are simple to use. In addition, small changes in these thresholds do not always produce as large changes in population-based indexes as weights would in an aggregate well-being index.

For example, we treat both (1) being tortured and (2) being tortured and starving, as impoverished and unacceptable conditions. Condition 2 may be harder to remedy than 1, but we do not have to decide how much worse 2 is than 1 in order to decide that the person is experiencing a state of generalized poverty. Similarly, few would argue that persons to be tortured four times in the next year are secure no matter how high their income. Rather, being tortured in the next year will put them in a state of deprivation or generalized poverty. The prospect of this outcome makes them insecure today. Of course, for analytical purposes other than defining human security, definitions of generalized poverty that include trade-offs between the level of achievement in one domain of well being versus another may be appropriate, particularly when individuals freely choose to balance some domains of well-being against others. Since we do not need to create and justify weights in combining domains, we can include as many other domains as the international community agrees on. For example, we can include education as a domain of well-being, even though it was once not considered an essential element for having a minimal level of well-being. (King and Murray 2002, 594-95)

Answer:

Clearly they take a necessary condition view of the “human security” concept. They are in fact weighting each dimension, and could use fuzzy logic weights if they wanted.

84. Chapter 2 stresses that an important part of concept-building is considering the negative pole of the concept. Nussbaum and Sen focus on that concept of human *needs*. What is the opposite pole of a human need?

Answer:

Classically one contrasted the concept of needs with that of *luxury*. For example, “[W]hy is it that all societies make some category distinction between need/necessity and luxury? ... It is not paradoxical to assert that the distinction constitutes a unity, just as it is not mysterious to talk of two gloves, a right-hand and a left-hand, constituting *a pair*. ... The relation between necessity and luxury is negative or oppositional so that ... luxury specifies the necessity by indicating what it is not” (Berry 1994, 231-32).

85. When deciding who gets a particular good the weakest link principle, chapter 5, can be used with the need-luxury scale to make a decision. Braybrooke (1987) calls this the Principle of Precedence. Explain the moral philosophy involved.

Answer:

The Principle of Precedence means that when Alan needs something that Brenda wants but does not need, then meeting Alan’s need is *prima facie* morally preferable to satisfying Brenda’s desire. This suggests that needs have precedence over

luxuries. The weakest link principle then suggests that for any good you look at each person's need-luxury score on the good and give it to the person with the minimum (i.e., most needy).

Concepts, measurement, scaling

86. It is not common for scholars to average data that lie on an ordinal scale. This is not uncommon with human rights data such as PTS or CIRI for example, see Hathaway (2002) and Hafner-Burton and Ron (2009). What is the author implicitly doing when making these averages?

Answer:

They are converting the ordinal data into interval data.

87. The minorities at risk project (MAR) has received much criticism for selecting minorities at risk. The new AMAR deals with this by adding "All" to MAR (Birnie et al. 2014). Discuss why this is bad terminology.

Answer:

Presumably the previous version, MAR, had all minorities at risk, what they have done is in fact dropped the "risk" part of the definition, it is now a dataset on minorities *tout court*.

88. Samuel Moyn's published an influential book on *Christian* human rights (2015). What about a book about *Jewish* human rights. Human rights are very closely tied to democracy, so what about a book on *Christian* democracy? How is the concepts+/-adjectives (i.e., human rights with adjectives) working in this case?

89. Concepts often have scales with 5-10 levels. What would be a fuzzy logic approach to these kinds of scales? Why might it be better than treating the scale as interval? For example, take the MAR minorities at risk dataset (or AMAR): "1 denotes political banditry and/or sporadic terrorism, 2 captures campaigns of terrorism, 3 local rebellions, 4 is small-scale guerrilla activity with fewer than 1000 armed fighters and sporadic armed attacks, 5 accounts for intermediate guerrilla activity, 6 is large-scale guerrilla activity including more than 1000 armed fighters, frequent armed attacks, 7 is protracted civil war fought by rebel military. For further information see the AMAR codebook. Strictly speaking this variable is an ordinal variable but it has generally been treated in the literature as an interval" (Birnie et al. 2016).

Answer:

The standard fuzzy logic approach would be to transform the scale using the default S-curve calibration method. It would be a matter of interesting conceptual discussion if 4 on the 1-7 scale would be the .50 tipping point. See the following question for whether one might add a 0 to the scale.

90. The AMAR "rebellion" scale (Birnie et al. 2016) has as its lowest rebellion level "political banditry and/or sporadic terrorism." Often zero on the scale (like in many dichotomous variables) is potentially a causally heterogeneous category. Discuss to what extent *theoretically* zero is conceived of as "no mobilization"

as opposed to nonviolence mobilization such as political parties or nonviolent action. Would the causal mechanisms leading to these two different forms of zero be the same or different? (see the previous question)

91. Discuss the use of the logical in the following conceptualization of “extreme group”. For example, consider extreme nonviolent action, e.g., Gandhi.

So persons or movements may be called extreme because their views are far out of the mainstream on some issue, or because they use violence to further their goals, or because they are rigid and intolerant of other points of view. A group can be extremist if it has only one of these features. Some movements – Al Qaeda is a good example – have all of them. Indeed, this is not surprising, because, as we will show, the latter two characteristics, the predilection for violence and the tendency toward rigidity and intolerance, can be derived from the first characteristic. (Wintrobe 2006, 6)

92. Variable transformations and rescaling can produce somewhat arbitrary results. Consider the typical linear transformation of the polity measure of democracy from -10 to 10 to e.g., 1-21, followed by logging the variable. How can linear transformations followed by logging produce very different results depending on the linear transformation, e.g., into [0,1] [1-21] [101-121], etc.?

Answer:

Since logging is a quite nonlinear transformation the same range will look quite different depending on whether the range is near zero or quite distant from zero. This can be seen by examining a graph of the natural log function.

93. The Polity measure of democracy has a code of -77 for cases where there is no effective government, e.g., complete state failure. Some conceive of this as a problem of missing data and hence want to estimate the value. For example, sometimes these are given a value of 0 on the polity -10 to 10 scale. Discuss whether coding regime type requires that there actually be a government.
94. Terminology is often very important and leads projects in certain directions. The “Minorities at Risk (MAR) implies that the minority in question is not in the government. Could one pursue a “Majorities at Risk” project. For example, “the MAR coding scheme does not fit countries with ruling minorities or complex coalitions of ethnically defined elites, as for example in Nigeria, India, or Chad, where ethnic conflict will be pursued in the name of excluded majorities (rather than minorities) or ethnic groups that share power (and are thus not “at risk”). (Cederman et al. 2010, 91).
95. Skaaning et al. make the claim below. Contrast this with the relationship between inclusiveness and contestation in Coppedge’s analysis. Interpret the Coppedge figure in set theoretic terms. “Our claim is that once a minimal level of inclusion has been attained—sufficient to constitute an electorate and hence the precondition for an election, as discussed—further increases in suffrage are irrelevant unless and until elections are competitive. This argument will be taken up below. For the moment, we note that the claim to unidimensionality is deductive rather than inductive” (Skaaning et al. 2015, 2).

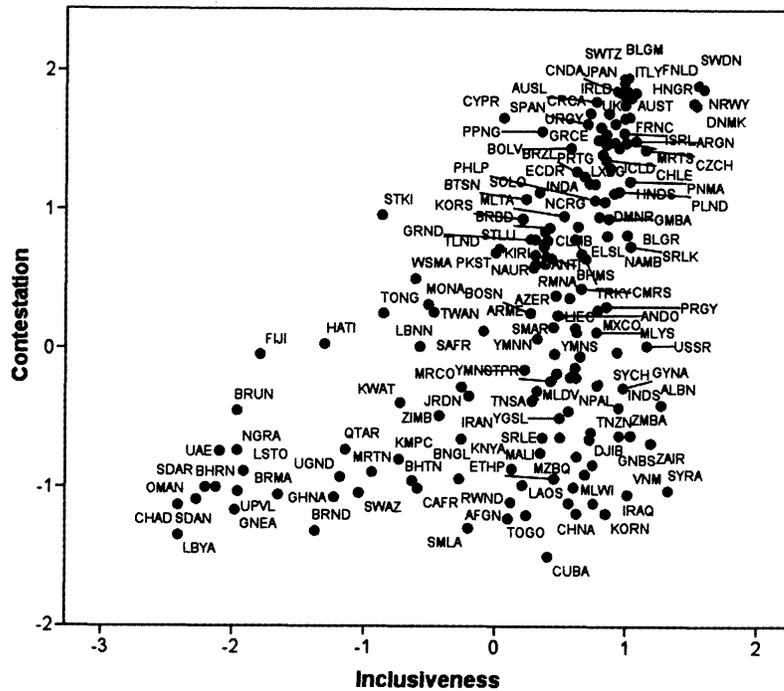


Figure 2.3 Distribution of Countries on Two Dimensions of Democracy, 2000. Both indicators were estimated by exploratory Principal Components Analysis of fourteen democracy indicators. The units of measurement are standard deviations. The estimation procedure and justifications for interpreting these as indicators of Dahl's two dimensions of polyarchy are in Coppedge, Alvarez, and Maldonado (2008).

Answer:

The Coppedge figure would be interpreted in a set theoretic fashion that inclusiveness is necessary for contestation.

96. Weeks's typology of authoritarian regimes is presented as a nominal typology of four types. However, it is in fact a "partially ordered" ordinal typology. Give the partial ordering of the types in terms of the predicted likelihood of militarized conflict. This partial ordering is very common in 2×2 table typologies.

TABLE 1.1 Typology of authoritarian regimes

	Civilian audience or leader	Military audience or leader
Nonpersonalist (Elite-constrained leader)	Machine	Junta
Personalist (Unconstrained leader)	Boss	Strongman

Answer:

Using the terminology of "Multimethod research, causal mechanisms, and case studies: an integrated approach" the ordering is (1,1), then (0,1) and (1,0) which are equal (in theory but perhaps not in the data) then at the bottom is (0,0).

97. Often the line between nominal, ordinal and interval is blurred once one begins to do mathematical operations like addition or multiplication. Explain why the polity measure is interval, not ordinal. For example, see this discussion:

One way to categorize this growing corpus of indicators is by the type of scale used to measure the key concept (democracy)—binary, ordinal, or interval. Binary indices include the democracy–dictatorship (“DD”) index produced by Przeworski and collaborators (Cheibub, Gandhi, Vreeland, 2010) and an index produced by Boix, Miller, and Rosato (2013, hereafter “BMR”). Ordinal measures include the Political Rights (“PR”) index and the Civil Liberty (“CL”) index, both produced by Freedom House (2013), along with the Polity2 index drawn from the Polity IV database (Marshall, Gurr, & Jaggers, 2013)” (Skaaning et al. 2015, 2).

Answer:

Once one begins to add (or subtract) one is implicitly converting the binary or ordinal variables into interval ones. This is classic measurement theory.

98. Call (2010) discusses the literature on the important and large concept of “failed state.” He argues that there are three large secondary-level dimensions to this concept conceptualized by three “gaps”: (1) capacity gap, (2) security gap, and (3) legitimacy gap. He shows that these gaps are not very correlated: “Moreover, the three security gaps produce remarkably different rankings of countries of the world.” (p. 309). He sees this as a negative finding for the concept of a failed state. Discuss the underlying correlational view of concepts that he is drawing on. How could this non-correlation but a positive thing from a definitional point of view?

Answer:

He works on the correlational or indicator view that all the dimensions-indicators of a concept should be correlated. A definitional view works on the notion that each definitional part should be different. Hence it is a positive feature that these dimensions are not in fact correlated, because they are in fact different dimensions of the failed state concept.

99. Call (2010) discusses the literature on the important and large concept of “failed state.” He argues that there are three large secondary-level dimensions to this concept conceptualized by three “gaps”: (1) capacity gap, (2) security gap, and (3) legitimacy gap. He illustrates this via a triangle – figure 2 – with each dimension at a corner. What is an alternative way to illustrate this? What are its advantages and disadvantages vis-à-vis a triangle figure?

Answer:

A perhaps more natural way to illustrate this is via a cube. If one tries to locate a country within a triangle it will be very difficult to illustrate its distance from each corner, because one is trying to force three dimensions into two. Also, the three-dimensional version of a triangle is often a pyramid. This is not good because one cannot be high (or low) on one dimension and low on another.

100. One potentially large issue is what might be called “conceptual endogeneity.” This is where a secondary-level dimension is part of the dependent variable and also considered as an independent variable. There has been an explosion

of studies of elections in hybrid democratic regimes. Should these elections be considered a *cause* of democratization? Does this conflict with the fact that freer and more competitive elections will change the democracy score of the country by definition? For example, “Scholars also disagree about the role of elections in promoting democratic change. (p. 12) While a familiar indicator of democratic progress, we must remember, electoral turnover does not always support democratic development. (p. 13) These issues lead to a final and more fundamental concern about attributing too much democratic influence to elections” (Bunce and Wolchik 2011, 14).

101. Big expansive concepts run the risk of what might called, causal-ontological tautology. Often it may be unclear if a given factor is part of the definition of the dependent variable, or a causal factor. Discuss Nathan’s views (2006) on domestic instability as a cause or defining feature of a security community. Find passages that make it seem like it is defining and find others where it is clearly causal.
102. Fordham (2011) logs all independent and dependent variables. The key independent variable is size of country which is a major cause of major power status, the dependent variable. Explore what logging does when the data include both very small and very large countries.
103. In *Two cultures* we illustrated a fuzzy logic semantic transformation of the polity measure using a triangular membership function. One could use this fuzzy logic variable in a statistical analysis. Another option is to use the polity measure and then argue that the functional relationship between democracy and the dependent variable has a triangular form. How would one go about this? Wand (2012) provides an example using polity and infant mortality, where the relationship has fits the triangular membership function.
104. One issue when concepts expand (e.g., quality of democracy literature) is potential conflicts when the expansive concept is used in empirical analyses, e.g., democracy as an independent variable. The risk is that the expansive concept includes as one of its dimensions the dependent variable, which might be termed conceptual tautology or endogeneity. Ringen (2011, 15) argues for a quality of democracy which includes democracy output:

Secondly, however, the measurement effort [of quality of democracy] should not stop there. It should follow through to observations of how the potential in the regime is manifested in the lives of citizens. No account of democratic quality should be considered valid without an account of how well the system actually delivers for citizens.

Explore what kind of dependent variables might be problematic with this concept of democracy.

105. It is quite common, and probably standard practice, in the literature on “quality of democracy” to use only “consolidated democracies.” Lijphart expresses the standard view quite clearly. Discuss whether the minimum bar should be consolidated democracies or whether it can or should include gray zone or competitive authoritarian regimes.

Measuring the quality of democracy is the third step in a three-step judgment. We have to begin by establishing (1) that the countries we are interested in are sufficiently democratic in terms of regime and institutional characteristics to justify being called democracies, and (2) that their democracy is firmly established. . . . I am not sure where exactly the minimum threshold for institutional democracy should be drawn. My main argument is that there must be such a minimum, below which a country does not qualify as a democracy, and that it does not make sense to discuss the quality of democracy in countries whose institutions and rules are not sufficiently democratic. (Lijphart 2011, 18)

106. Bühlmann et al.'s (2012) Democracy Barometer uses an interesting graphical device to show how countries (figure 3) score on the nine key components of the concept, reproduced here as figure 1. Propose how one could use this to give a measure from zero to 1.0 of the overall qualitative of democracy. Could you extend this to 9-dimensional space?

Answer:

The overall measure would be percentage of the polygon covered in gray. An extension to nine-dimensional space would be the volume of the convex surface defined by the nine points (one can visualize this with a cube).

107. The new “Democracy Barometer” (Bühlmann, M. ; et al. 2012) is a large project whose goal is to conceptualize and measure the “quality of democracy.” It is a very complicated concept with at least 4 levels. It is an interesting example of a hybrid concept structure. Discuss where necessary condition ideas are used in the aggregation and when family resemblance is used.
108. A recent tendency in concepts is to think specifically of the *quality of* concept *X*. Examples include the “quality of peace” (e.g., Wallensteen) or “quality of democracy” (e.g., Bühlmann, M. et al. 2012). Take democracy and discuss whether a common measure such as polity is also a measure of the quality of democracy. In terms of the underlying concept scale what does “quality of” refer to in practice when used with a concept *X*.

Answer:

Polity and other measures of democracy are quality of democracy measures. Typically “quality of” means that the scale does not extend the positive pole far enough.

109. Bühlmann, M. (et al. 2012) use “best practices” to determine the maximum value on the indicators for their Democracy Barometer. However, they claim that they do not need to worry about the minimum values (negative pole) because they are only looking at “established democracies.” Can they get by without exploring worst practices?
110. One potentially large issue is what might be called “conceptual endogeneity.” This is where a secondary-level dimension is part of the dependent variable and also considered as an independent variable. There has been an explosion of studies of elections in hybrid democratic regimes. Should these elections be considered a *cause* of democratization? Does this conflict with the fact that freer and more competitive elections will change the democracy score of the country

Figure 1: Measuring the quality of democracy

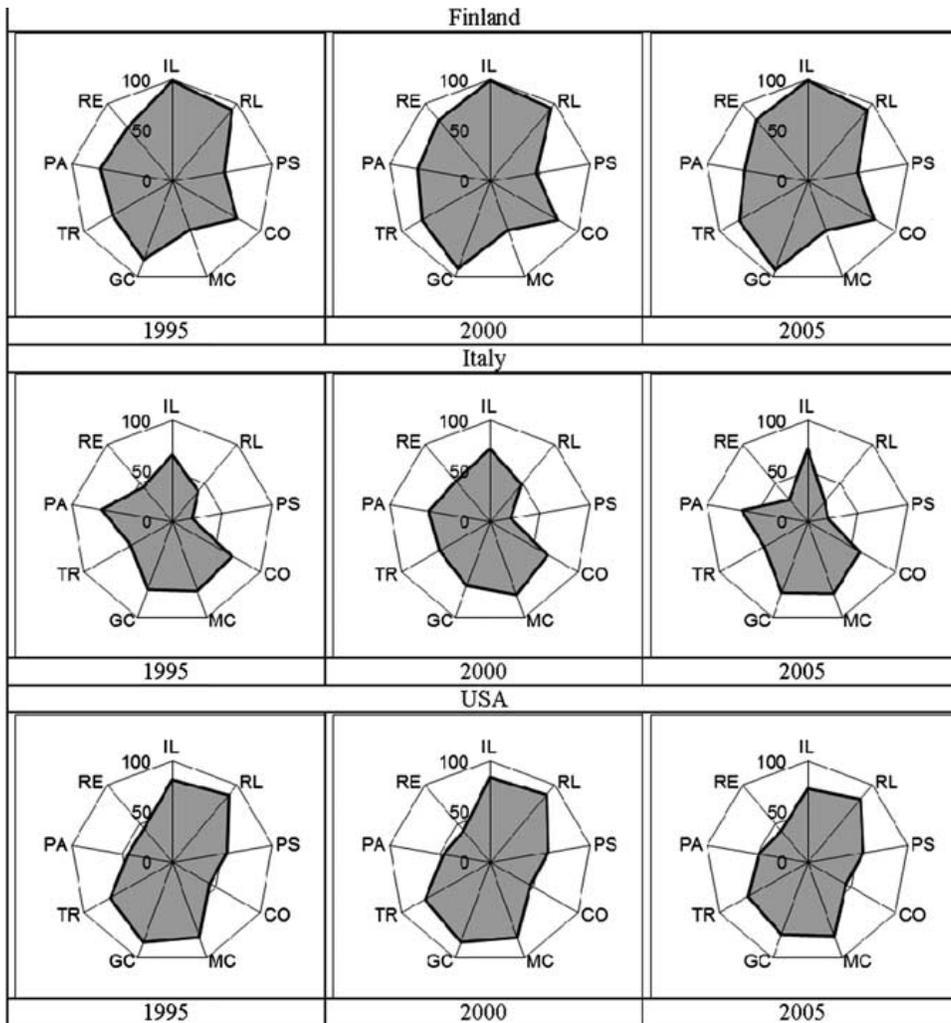


Figure 2 Shapes of democracy, three countries compared. IL: Individual Liberties; RL: Rule of Law; PS: Public Sphere; CO: Competition; MC: Mutual Constraints; GC: Governmental Capability; TR: Transparency; PA: Participation; and RE: Representation.

Source: Bühlmann et al. 2012.

by definition? For example, “Scholars also disagree about the role of elections in promoting democratic change. (p. 12) While a familiar indicator of democratic progress, we must remember, electoral turnover does not always support democratic development. (p. 13) These issues lead to a final and more fundamental concern about attributing too much democratic influence to elections” (Bunce and Wolchik 2011, 14). See also Gandhi and Lust-Oskar (2009) who discuss at length the causal effects of elections on authoritarianism.

111. Big expansive concepts run the risk of what might called, causal-ontological tautology. Often it may be unclear if a given factor is part of the definition of the dependent variable, or a causal factor. Discuss Nathan’s views (2006) on domestic instability as a cause or defining feature of a security community. Find

passages that make it seem like it is defining and find others where it is clearly causal.

112. Call (2010) discusses the literature on the important and large concept of “failed state.” He argues that there are three large secondary-level dimensions to this concept conceptualized by three “gaps”: (1) capacity gap, (2) security gap, and (3) legitimacy gap. He shows that these gaps are not very correlated: “Moreover, the three security gaps produce remarkably different rankings of countries of the world.” (p. 309). He sees this as a negative finding for the concept of a failed state. Discuss the underlying correlational view of concepts that he is drawing on. How could this non-correlation but a positive thing from a definitional point of view?

Answer:

He works on the correlational or indicator view that all the dimensions-indicators of a concept should be correlated. A definitional view works on the notion that each definitional part should be different. Hence it is a positive feature that these dimensions are not in fact correlated, because they are in fact different dimensions of the failed state concept.

113. Call (2010) discusses the literature on the important and large concept of “failed state.” He argues that there are three large secondary-level dimensions to this concept conceptualized by three “gaps”: (1) capacity gap, (2) security gap, and (3) legitimacy gap. He illustrates this via a triangle - figure 2 - with each dimension at a corner. What is an alternative way to illustrate this? What are its advantages and disadvantages vis-à-vis a triangle figure?

Answer:

A perhaps more natural way to illustrate this is via a cube. If one tries to locate a country within a triangle it will be very difficult to illustrate its distance from each corner, because one is trying to force three dimensions into two. Also, the three-dimensional version of a triangle is often a pyramid. This is not good because one cannot be high (or low) on one dimension and low on another.

114. In *Two cultures* we illustrated a fuzzy logic semantic transformation of the polity measure using a triangular membership function. One could use this fuzzy logic variable in a statistical analysis. Another option is to use the polity measure and then argue that the functional relationship between democracy and the dependent variable has a triangular form. How would one go about this? Wand (2012) provides an example using polity and infant mortality, where the relationship has fits the triangular membership function.

115. Recently statisticians have become much more concerned with problems of “unit homogeneity.” Here is Henry Brady defining the idea:

We shall make the transformation of $Y_B(1, 0)$ into $Y_A(0, 0)$ in two steps which are depicted on Table 10.9. If A and B are identical and Z_A and Z_B [Z is the treatment] are identical as well (footnote: By saying that Z_A and Z_B have to be comparable, we mean that $Z_A = 0$ and $Z_B = 0$ are the same thing and $Z_A = 1$ and $Z_B = 1$ are the same thing.) (although we haven't indicated how this might be brought about yet) it might be reasonable to suppose that: $Y_B(1, 0) = Y_A(0, 1)$, [*Identity of units and treatment or Unit Homogeneity*].

That is, A and B are mirror images of one another so that the impact of $Z_A = 1$ and $Z = 0$ on B is the same as the impact of $Z = 0$ and $Z = 1$ on A . (Brady 2008, 258)

Analyze how valid concepts are critical to the existence of unit homogeneity.

Answer:

Holland (1986) says “unit homogeneity” means that units are prepared carefully “so that they ‘look’ identical in all relevant aspects” (Holland 1986, 948). To be “identical” means that the concept must produce identical units, A and B in the Brady analysis. If a study looks at all “states” then the conceptualization of state means that there are no casually important differences in “stateness.” Treatments, Z in the Brady analysis, also are assumed to be homogeneous. So if democracy is an dichotomous independent variable that means that variations in democracy have no causal impact on the dependent variable.

116. Give two reasons why the following definition of “extreme” case does not fit with a fuzzy logic approach to concepts or one defended by *Social science concepts*.

Extremity (E) for the i th case can be defined in terms of the sample mean (\bar{X}) and the standard deviation (s) for that variable: $E_i = (|X_i - \bar{X}|)/s$. This definition of extremity is the absolute value of the Z-score (Stone 1996, 340) for the i th case. This may be understood as a matter of degrees, rather than as a (necessarily arbitrary) threshold. Since extremeness is a unidimensional concept, it may be applied with reference to any dimension of a problem, a choice that is dependent on the scholar’s research interest. Let us say that we are principally interested in countries’ level of democracy—the dependent variable in the exemplary model that we have been exploring. The mean of our democracy measure is 2.76, suggesting that, on average, the countries in the 1995 data set tend to be somewhat more democratic than autocratic (by Polity’s definition). The standard deviation is 6.92, implying that there is a fair amount of scatter around the mean in these data. Extremeness scores for this variable, understood as deviation from the mean, can then be graphed for all countries according to the previous formula. These are displayed in Figure 3. As it happens, two countries share the largest extremeness scores (1.84): Qatar and Saudi Arabia. Both are graded as -10 on Polity’s twenty-one-point system (which ranges from -10 to +10). These are the most extreme cases in the population and, as such, pose natural subjects of investigation wherever the researcher’s principal question of interest is in regime type. (Seawright and Gerring 2008, 301).

Answer:

(1) This procedure depends on the sample and not on the meaning of the concept. For example, 2.76 is well outside the zone of what polity considers a democracy. Notice that given the positive mean of the data, all the extreme cases are nondemocracy.

(2) An extreme case based on conceptual meaning would typically mean either -10 or positive 10 on the polity scale, i.e., the extreme positive or negative pole.

117. Use the following quote to discuss the importance of predictive power in terms of evaluating a measurement model or concept. Contrast this with a qualitative approach which stresses the semantics and content of the test items.

The g factor is an artifact of linear correlation analysis. A theorem of Suppes and Zanotti (1981) informs us that for any vector of test scores from an achievement test, it is possible to construct a scalar latent factor such that, conditional on the factor, test scores are independent. The g factor exists for any vector of binary, finite-valued, or countably valued random variables. The g of conventional psychometrics is a product of mathematical conventions in factor analysis. A g also exists to account for correlations among test scores. That is a mathematical theorem of no behavioral consequence for psychometrics or for finance, another field addicted to factor models. The value of g in predicting behavior is the real test of its importance. There is much evidence that it has predictive power. (Heckman 1995, 1105)

118. Pevehouse in an important study of the impact of regional organizations on democratization wants to measure the “democraticness” of a regional organization. This is defined as the number of member states that are democracies. Of course a given country is likely a member of numerous regional IGOs, the question is then is how to aggregate to give one number for the variable: “I use only the most democratic organization to measure each state’s IO involvement (versus an average of all IOs) since it should take only one membership to supply any of the causal mechanisms posited by my theory” (Pevehouse 2005, 70). Discuss this rationale for using the maximum as an aggregation or structural principle. What if you thought being a member of authoritarian IGOs would hinder or discourage democratization? Could you possibly test this in contrast to the democratization hypothesis?

Answer:

One might argue that it is the “net effect” of democratic and authoritarian IGO memberships. Also, it is possible that multiple memberships in IGOs might have an increased effect. Hence one could test variables such maximum authoritarian membership in regional IGOs, or sum of democratic IGO memberships.

119. Cheibub et al. (2010) is a review and updating of the Alvarez et al. and Przeworski et al. well-known measure of democracy. They strongly critique the polity measure and the Freedom House for their aggregation schemes and the large number of ways the scores on the secondary-level dimensions produce the same value on the basic level:

Regarding aggregation, for each of the ten categories in the political rights checklist and the 15 categories of the civil liberties checklist, coders assign ratings from zero to four and the points are added so that a country can obtain a maximum score of 40 in political rights and 60 in civil rights. With five alternatives for each of ten and 15 categories, there are $5^{10} = 9,765,625$ possible ways to obtain a sum of scores between zero and 40 in political rights, and $5^{15} = 30,517,578,125$ possible ways to obtain a sum of scores between zero and 60 in civil liberties. . . . In all of these cases, the aggregation rules are arbitrary. (Cheibub et al. 2010, 75)

While their dichotomous coding scheme with three “categories” does not produce the same huge option of possibilities, the same issue arises in their coding scheme. Explain how the aggregation issue arises in their measure. Are their aggregation rules “arbitrary?”

Answer:

While Cheibub et al. do not think of their coding rules as involving an aggregation procedure, they certainly do. They use the necessary and sufficient condition one. While there is only one way to be coded as a democracy, i.e., one on all the rules, there are multiple ways to be coded as a zero. Assuming three rules there are for example, (0,0,1), (1,1,0), (0,0,0), etc. In short there are $3^2 - 1 = 7$ ways to be a “dictatorship.”

120. Alvarez, Przeworski, Cheibub, Vreeland, and Gandhi who are all active working together on the concept and data on regime type have a clear preference for the term “dictatorship” as the opposite pole to democracy. In contrast, scholars using the polity data prefer the term “autocracy” or “authoritarian.” Is there anything of theoretical or conceptual importance at stake in this terminological difference?
121. One of the best ways to find out about concepts is via the codebook for datasets. Sometimes reading the codebook provides some surprises about the concept (and hence the data) that most users are probably not aware of. An example of this phenomenon are the GTD terrorism data (CETIS 2007), which are in the process of becoming the standard dataset for the study of terrorism. If one reads the GTD codebook the problematic nature of the concept is acknowledged in the introduction, but almost all the codebook is about the data. To find out what the GTD concept of terrorism actually is one must read an appendix! As an exercise I recommend that one read the codebook and outline what you think that concept of terrorism used is. I think you will then be surprised by the content of the appendix.
122. It seems odd that the dichotomous coding of democracy normally requires cases to have 7 or higher on the Polity scale to be democratic, whereas the trichotomous regime classification that includes anocracy lowers the standard, such that cases with 5 or higher count as democracies. One might reasonably ask: why should a trichotomous coding scheme have a different break point for democracy than a dichotomous one? Could you come up a trichotomous scheme that remains faithful to the standard polity dichotomization practice? This practice apparently was started by Fearon and Laitin (2003) and has been followed by scholars of civil war ever since.

Answer:

One obvious way to remain consistent with the polity dichotomous rule is to code authoritarian regimes as -7 to -10. Hence anocracies would be -6 to 6 range.

123. In the international relations there is a growing literature on what is called the “capitalist” peace (e.g., see the special issue of *International Interactions* 2010(2)). This literature usually has two goals, (1) so show that capitalist countries are less likely to have militarized conflicts, and (2) capitalism is more important than democracy in reducing conflict. Discuss what is the concept of “capitalism” used in these various studies. Then discuss what are the actual quantitative indicators used. How do they match up? Could you think of better indicators

or tests? When left-wing, e.g., socialist or communist, critics discussed “capitalism” how was their meaning of capitalism different from the capitalist peace literature? Discuss McDonald (2010) and the various forms of the concept of capitalism from the beginning of the article and how they are implemented the quantitative analyses at the end.

Answer:

If you look at the Gartzke, Mousseau, and McDonald pieces (in the *International Interactions* special issue) “capitalism” is discussed in terms of (1) economic development, (2) (free) markets, (3) contract intensive economies, (4) integration into the global economy, (5) financial openness, (6) degree of property owned by government, (7) free trade and (8) government nontax revenues.

Most of these are either too narrow (e.g., government nontax revenues, financial openness) or different (e.g., integration into world economy which is not directly about the domestic economy, e.g., oil-exporting states).

One might reasonably define capitalism as a “market-based” economy. There seem to be at least two reasonable ways one might go about operationalizing this. First, one might contrast communist/socialist countries as a dummy variable against all other types. Another way to think about this is to consider the amount of economic activity in a country that goes through the government, which might be operationalized as government expenditures as a percentage of GDP (ideally this would be government at all levels).

McDonald (2010) is a good example of the conceptual and operational problems of this literature. He starts with general claims about the “capitalist” peace. Then he moves to a claim that capitalist economies have less “public property.” One might think that public property is property owned by the government. This would then include land, highways, military bases, buildings, etc., not to mention financial capital assets (both at home and abroad). In practice, i.e., quantitative analyses, he uses nontax revenue of the government. This variable seems to be quite distant from the starting point of capitalism.

124. McCall Smith (2000) heavily relies on the concept of “legalism.” Discuss the choice of the negative pole of “legalistic” as “more diplomatic.” More generally that concept of legalization has been important in international relations theory (e.g., see the special issue of *International Organization*, Abbott, K. et al. 2000).
125. Draw the three-level figure that corresponds to Levitsky and Way’s (2010 Appendix I) concept of “competitive authoritarianism.”
126. Concepts concepts+/-adjectives, e.g., competitive authoritarianism, often confuse to two quite different issues. Sometimes they mean regions in the middle of a continuum as is often the case with democracy. They can also two *separate* concepts that are put together, which is the classic use, e.g., “pet fish.” He and Warren (2011) illustrate this potential confusion. The concept they propose is “deliberative authoritarianism” which they discuss in the context of hybrid regimes. However, they argue that “deliberation” is separate from “democracy”: “If deliberation and democracy are distinct in theory – the one a kind of communication, the other a distribution of powers to decide – they have often been

distinct in practice as well... These observations can be ideal typed. If deliberation is a phenomenon different in kind from democracy, then (in theory) it might combine with non-democratic (authoritarian) distributions of power. We illustrate the ideal types in Table 1, where the terms “authoritarian” and “democratic” refer to the relative dispersion of means of empowerment (dispersion, by implication, provides more opportunities for the affected to exercise power), while communication can vary from “instrumental” to “strategic” and “deliberative.”. The combinations produce five familiar types, and one unfamiliar type, deliberative authoritarianism” (He and Warren 2011, 273). Analyze the difference between middle of the continuum and the separate concept approaches in dealing with concepts with adjectives.

127. While scholars often use the “ideal type” to think about concepts there is virtually no methodological literature on building ideal types. He and Warren (2011) illustrate some of the issues of trying to do ideal type concepts with two dimensions: “we then develop the ideal type of deliberative authoritarianism—a regime style that makes frequent use of authoritarian deliberation. In developing this ideal type, we depart from much of the literature on hybrid regimes (He and Warren 2011, 270). If one thinks about about “deliberation” as a separate concept (see the question above) consider their view of the extreme positive pole of “deliberative authoritarianism” (e.g., Table 1, 273). Is it really the extreme for deliberation? (Hint: think about the positive extreme for deliberation for democracy).

Answer:

If one thinks of deliberation as a concept in its own right the ideal type, i.e., positive pole, should continue for at least one more column. Certainly good deliberative democracy includes more deliberation than deliberation in authoritarian regimes like China. Since the authors focus on ideal type which is a combination of authoritarianism and deliberation, they naturally want to stop the scale at the end of the authoritarian row, without considering deliberation as a concept in its own right. Hence it would be less natural to have an empty cell at the end of the second row which is high quality deliberation which one would naturally have to include if one wanted to include the positive pole of deliberation for democracy.

128. Adjectives are often used to distinguish among subtypes. Discuss Rathbun’s use of “qualitative” to distinguish between different types of multilateralism; for example, “RH1: State preferences for qualitative multilateralism will be accompanied by preferences for organizations with a smaller number of members.” Discuss the other type which is “quantitative” multilateralism.
129. Gandhi and Lust-Oskar (2009) review the literature on “authoritarian elections.” Discuss this interesting example of a concepts+/-adjective. (Fair or competitive) elections are of course part of the definition of democracy. Presumably their absence is a requirement for an authoritarian regime. Do such cases fall into the gray zone between democracy and authoritarianism?
130. There is an extensive cognitive psychology literature on the use of *prototypes* in categorization (see Murphy (2002) for a nice review). The basic idea is that people (not social scientists) often think about concepts via prototypes. For example, the concept of a “bird” is based on prototypical birds, e.g., sparrows. It

is less clear whether social science concepts should or are based on prototype models of concepts. Shadish, Cook, and Campbell (2002; essentially the 3rd edition of the classic Cook and Campbell) provides an example where concepts (aka “constructs”) are discussed using the prototype idea. Discuss the use of prototypes in social science. Are they different from ideal types? Contrast prototypes with concepts based on defining, essential features (a common contrast in the cognitive psychology literature).

131. Brown (2010) proposes a measure for measuring IGO delegation and then applies it to two IGOs. Table 1 has the standard three-level concept structure. He defends a additive index of all the indicator-level variables. Discuss alternative aggregation procedures. Different indicators have different maximum possible values which implies a weighting scheme. The additive index assumes substitutability and equivalence, theoretical and empirical, of the various indicators. Discuss this weighting and aggregation scheme.
132. Colaresi, M. et al. (2007) in their prominent work on the concept of “strategic rivalries” argue (chapter 6) that there are two types of rivalry “positional” (i.e., roughly competition in the regional or global system) or “spatial” (i.e., over territory). Table 6.1 argues that there is a continuum from pure positional to pure spatial, i.e., the “spatial-positional continuum.” Discuss whether one continuum with the two combined would be better than two continuums one for each type of rivalry going from presence to absence on each continuum.
133. Abbott, Keohane, Moravcsik, Slaughter, and Snidal (2000) published a very influential article on “The concept of legalization.” This article could serve as a good example for the discussion of concepts. (1) Draw a diagram that represents the three-level structure of their concept. The three secondary-level dimensions are quite clear and the indicators are given in various tables. (2) What is the structure that they implicitly use to connect secondary-level dimensions and indicators? (3) Thinking about the negation of a concept is important; what about the negations given in figure 1 as well as table 1? (4) “Delegation” (table 4) might be separated into two, or even three, separate dimensions? Are “dispute resolution,” “rule-making” and “implementation” part of the higher level concept of “delegation?” (5) In the delegation dimension the concept of “binding” appears frequently, but is also central to the “obligation” dimension. Is this a problem?

Answer:

It seems like the implicit structuring used at both levels is the family resemblance one. There is not much sense that any of these are necessary. There are potentially other negations that could be used in figure 1, such as “nonbinding” for obligation. For precision it is interesting that the positive pole uses the term “rule” while the negative pole uses the term “norm.” Delegation is problematic because it includes both implementation and arbitration. In terms of figure 1, “international court” suggests third-party dispute settlement mechanism and so the opposite might be bilateral agreements. Much of the problem with delegation is that this is where most of the *organizational* dimensions of legalization appear; but it is not obvious that one would lump administrative, monitoring, and sanctioning organizations together with courts (i.e., one would not do this in

an analysis of domestic governance and legal systems.) Also missing is a potential dimension about *who* makes international rules, e.g., states, United Nations, IGOs, etc.

134. Birch (2012) in a book on the concept and causes of “Electoral malpractice” argues against using the weakest link, (p. 46) for combining (or aggregating) her three secondary-level dimensions because that produces less variation in data. Explain why a focus on the concept of electoral malpractice rejects this argument.
135. Birch (2012) in a book on the causes of “Electoral malpractice” includes the Freedom House democracy measure as a lagged (five year) independent variable. Explain why she runs the risk of “conceptual tautology” with her dependent variable of electoral malpractice.
136. Gates et al. (2006) reformulate a new three dimensional concept of democracy using polity and Vanhanen. They use a cube (such as that in the Possibility Principle chapter) to think about their concept of democracy, anocracy, and autocracy. In their statistical analyses they use a dichotomous coding of democracy, autocracy, and anocracy. How code they have used continuous [0,1] variables for each of these?

The ideal types also include polities that are close to the corners. As the cube in Figure 1 defines a space, it is possible to examine the distances within this space. In order to classify a regime as either Ideal or Inconsistent, the distance from the point given by the polity’s coordinates to the eight corners and the midpoint of the cube is calculated. A regime is defined as Democratic or Autocratic if it is closer to either of the ideal type corners of the cube than to the other corners or the midpoint. The Democratic ideal type will hence include observations that are closer to the corner [1, 1, 1]. Since it is the distance from the democratic corner that defines the ideal type, scores close to 1 on one of the dimensions to some extent offset low scores on the other dimensions. The autocratic ideal type includes all polities that are closer to the autocratic corner than any of the other reference points. All polities that are not coded as Autocratic or Democratic are coded as Inconsistent. For the 1800–2000 and 1900–2000 periods the respective distributions of the three types of polities were as follows: Autocratic (43%, 39%), Democratic (14%, 17%), and Inconsistent (43%, 44%). (Gates et al. 2006, 898, note that they conceptualize the three dimensions this with the cube).

Answer:

Using the cube they can calculate three distances for each data point in the cube: (1) the distance to (1,1,1) which would be the democracy score, (2) the distance to (0,0,0) which would be the autocracy score, and (3) distance to (.5,.5,.5), this distance will have to be normalized to be in the [0,1] range.

137. Volgy et al. (2008) is a nice example of an implicit three-level concept structure. Draw a figure of the concept. What are the dimensions and the structural principles used at each level?
138. State failure is the subject of much academic research as well as interest to policy organizations such as the World Bank and the Carnegie Endowment, not to mention the large state failure project. One of the important risks with complex

concepts such as “failed state” (see Iqbal and Starr 2009 for a review) is that some of the secondary-level dimensions of the concept may also be viewed as causes or effects of the phenomenon. Examine the various concepts of state failure and determine which might really be seen as causes or effects of state failure rather than the concept itself.

Answer:

For example, as Iqbal and Starr (2009, 316) state: “Specifically, most existing measures or indices of state failure incorporate a number of factors that may, in fact, be determinants of state collapse – such as civil strife and poverty.”

139. Ohlson (2008) has implicit two-level theory. One might think that the basic level variables are the same, his “Triple-R” triangle for both causes of war and causes of conflict resolution, but that the secondary-level variables are different for each dependent variable. Discuss.
140. Pevehouse in an important study of the impact of regional organizations on democratization wants to measure the “democraticness” of a regional organization. This is defined as the number of member states that are democracies. Of course a given country is likely a member of numerous regional IGOs, the question is then is how to aggregate to give one number for the variable: “I use only the most democratic organization to measure each state’s IO involvement (versus an average of all IOs) since it should take only one membership to supply any of the causal mechanisms posited by my theory” (Pevehouse 2005, 70). Discuss this rationale for using the maximum as an aggregation or structural principle. What if you thought being a member of authoritarian IGOs would hinder or discourage democratization? Could you possibly test this in contrast to the democratization hypothesis?

Answer:

One might argue that it is the “net effect” of democratic and authoritarian IGO memberships. Also, it is possible that multiple memberships in IGOs might have an increased effect. Hence one could test variables such maximum authoritarian membership in regional IGOs, or sum of democratic IGO memberships.

141. Give two reasons why the following definition of “extreme” case does not fit with a fuzzy logic approach to concepts or one defended by *Social science concepts*.

Extremity (E) for the i th case can be defined in terms of the sample mean (\bar{X}) and the standard deviation (s) for that variable: $E_i = (|X_i - \bar{X}|)/s$. This definition of extremity is the absolute value of the Z-score (Stone 1996, 340) for the i th case. This may be understood as a matter of degrees, rather than as a (necessarily arbitrary) threshold. Since extremeness is a unidimensional concept, it may be applied with reference to any dimension of a problem, a choice that is dependent on the scholar’s research interest. Let us say that we are principally interested in countries’ level of democracy—the dependent variable in the exemplary model that we have been exploring. The mean of our democracy measure is 2.76, suggesting that, on average, the countries in the 1995 data set tend to be somewhat more democratic than autocratic (by Polity’s definition). The standard deviation is 6.92, implying that there is a fair amount of scatter around the mean in these data. Extremeness scores for this variable, understood as deviation from the mean, can then be graphed

for all countries according to the previous formula. These are displayed in Figure 3. As it happens, two countries share the largest extremeness scores (1.84): Qatar and Saudi Arabia. Both are graded as -10 on Polity's twenty-one-point system (which ranges from -10 to +10). These are the most extreme cases in the population and, as such, pose natural subjects of investigation wherever the researcher's principal question of interest is in regime type. (Seawright and Gerring 2008, 301).

Answer:

(1) This procedure depends on the sample and not on the meaning of the concept. For example, 2.76 is well outside the zone of what polity considers a democracy. Notice that given the positive mean of the data, all the extreme cases are nondemocracy.

(2) An extreme case based on conceptual meaning would typically mean either -10 or positive 10 on the polity scale, i.e., the extreme positive or negative pole.

142. Use the following quote to discuss the importance of predictive power in terms of evaluating a measurement model or concept. Contrast this with a qualitative approach which stresses the semantics and content of the test items.

The g factor is an artifact of linear correlation analysis. A theorem of Suppes and Zanotti (1981) informs us that for any vector of test scores from an achievement test, it is possible to construct a scalar latent factor such that, conditional on the factor, test scores are independent. The g factor exists for any vector of binary, finite-valued, or countably valued random variables. The g of conventional psychometrics is a product of mathematical conventions in factor analysis. A g also exists to account for correlations among test scores. That is a mathematical theorem of no behavioral consequence for psychometrics or for finance, another field addicted to factor models. The value of g in predicting behavior is the real test of its importance. There is much evidence that it has predictive power. (Heckman 1995, 1105)

143. Cheibub et al. (2010) is a review and updating of the Alvarez et al. and Przeworski et al. well-known measure of democracy. They strongly critique the polity measure and the Freedom House for their aggregation schemes and the large number of ways the scores on the secondary-level dimensions produce the same value on the basic level:

Regarding aggregation, for each of the ten categories in the political rights checklist and the 15 categories of the civil liberties checklist, coders assign ratings from zero to four and the points are added so that a country can obtain a maximum score of 40 in political rights and 60 in civil rights. With five alternatives for each of ten and 15 categories, there are $5^{10} = 9,765,625$ possible ways to obtain a sum of scores between zero and 40 in political rights, and $5^{15} = 30,517,578,125$ possible ways to obtain a sum of scores between zero and 60 in civil liberties In all of these cases, the aggregation rules are arbitrary. (Cheibub et al. 2010, 75)

While their dichotomous coding scheme with three "categories" does not produce the same huge option of possibilities, the same issue arises in their coding scheme. Explain how the aggregation issue arises in their measure. Are their aggregation rules "arbitrary?"

Answer:

While Cheibub et al. do not think of their coding rules as involving an aggregation procedure, they certainly do. They use the necessary and sufficient condition one. While there is only one way to be coded as a democracy, i.e., one on all the rules, there are multiple ways to be coded as a zero. Assuming three rules there are for example, (0,0,1), (1,1,0), (0,0,0), etc. In short there are $3^2 - 1 = 7$ ways to be a “dictatorship.”

144. Alvarez, Przeworski, Cheibub, Vreeland, and Gandhi who are all active working together on the concept and data on regime type have a clear preference for the term “dictatorship” as the opposite pole to democracy. In contrast, scholars using the polity data prefer the term “autocracy” or “authoritarian.” Is there anything of theoretical or conceptual importance at stake in this terminological difference?
145. One of the best ways to find out about concepts is via the codebook for datasets. Sometimes reading the codebook provides some surprises about the concept (and hence the data) that most users are probably not aware of. An example of this phenomenon are the GTD terrorism data (CETIS 2007), which are in the process of becoming the standard dataset for the study of terrorism. If one reads the GTD codebook the problematic nature of the concept is acknowledged in the introduction, but almost all the codebook is about the data. To find out what the GTD concept of terrorism actually is one must read an appendix! As an exercise I recommend that one read the codebook and outline what you think that concept of terrorism used is. I think you will then be surprised by the content of the appendix.
146. It seems odd that the dichotomous coding of democracy normally requires cases to have 7 or higher on the Polity scale to be democratic, whereas the trichotomous regime classification that includes anocracy lowers the standard, such that cases with 5 or higher count as democracies. One might reasonably ask: why should a trichotomous coding scheme have a different break point for democracy than a dichotomous one? Could you come up a trichotomous scheme that remains faithful to the standard polity dichotomization practice? This practice apparently was started by Fearon and Laitin (2003) and has been followed by scholars of civil war ever since.

Answer:

One obvious way to remain consistent with the polity dichotomous rule is to code authoritarian regimes as -7 to -10. Hence anocracies would be -6 to 6 range.

147. In the international relations there is a growing literature on what is called the “capitalist” peace (e.g., see the special issue of *International Interactions* 2010(2)). This literature usually has two goals, (1) so show that capitalist countries are less likely to have militarized conflicts, and (2) capitalism is more important than democracy in reducing conflict. Discuss what is the concept of “capitalism” used in these various studies. Then discuss what are the actual quantitative indicators used. How do they match up? Could you think of better indicators

or tests? When left-wing, e.g., socialist or communist, critics discussed “capitalism” how was their meaning of capitalism different from the capitalist peace literature? Discuss McDonald (2010) and the various forms of the concept of capitalism from the beginning of the article and how they are implemented the quantitative analyses at the end.

Answer:

If you look at the Gartzke, Mousseau, and McDonald pieces (in the *International Interactions* special issue) “capitalism” is discussed in terms of (1) economic development, (2) (free) markets, (3) contract intensive economies, (4) integration into the global economy, (5) financial openness, (6) degree of property owned by government, (7) free trade and (8) government nontax revenues.

Most of these are either too narrow (e.g., government nontax revenues, financial openness) or different (e.g., integration into world economy which is not directly about the domestic economy, e.g., oil-exporting states).

One might reasonably define capitalism as a “market-based” economy. There seem to be at least two reasonable ways one might go about operationalizing this. First, one might contrast communist/socialist countries as a dummy variable against all other types. Another way to think about this is to consider the amount of economic activity in a country that goes through the government, which might be operationalized as government expenditures as a percentage of GDP (ideally this would be government at all levels).

McDonald (2010) is a good example of the conceptual and operational problems of this literature. He starts with general claims about the “capitalist” peace. Then he moves to a claim that capitalist economies have less “public property”. One might think that public property is property owned by the government. This would then include land, highways, military bases, buildings, etc., not to mention financial capital assets (both at home and abroad). In practice, i.e., quantitative analyses, he uses nontax revenue of the government. This variable seems to be quite distant from the starting point of capitalism.

Historically, the socialist critics of capitalism focused on the fact that the government was dominated by (large) capital interests (think USA health care debates 2009-10). This is quite different than capitalism conceived of as a market economy.

148. Critical to the construction and analysis of concepts is the underlying scale or continuum from the positive to negative poles. One way to argue for an underlying continuum is if the data have the structure of a Guttman scale (Guttman 1944). The CIRI measure and state on human rights violations has four categories of violation: (1) torture, (2) political imprisonment, (3) extrajudicial killings, (4) disappearances. If the data fit the Guttman requirements then each category is a subset of the lower level categories. For example, if a state does (2) then does (1); if it does (3) then it also does (2) and (1); if it does (4) then it does (1)-(3). Cingranelli and Richards (1997) argue that their data on physical integrity rights has basically this structure. Draw a Venn diagram illustrating what this looks like.

Cingranelli and Richards propose a quantitative measure where each of the four dimensions gets 0-2 on the level of violations in a given country in a given year;

their final score is the sum of the scores of the four dimensions. Thus the worst performing states score 8, and the least human rights violating states get 0.

Addition is one way to structure the family resemblance concept. Another is the maximum. To make this simpler, assume that one can only score 0 or two on each dimension. Provide a rescaling of the four dimensions of the CIRI scale so that when you use the maximum to aggregate you would get *exactly* the same final score as the CIRI data *if* the data fit perfectly the Guttman requirements.

One problem is that the data do not exactly fit the Guttman requirements. For example, there are cases with “extrajudicial killing” but no “political imprisonment.” How would your proposed rescaling and use of the maximum deal with these cases? Do you think it is better or worse than using the sum.

Woods and Gibney (2009) critique the CIRI scale because it would count the torture, political imprisonment, and disappearance of a single individual three times. How does your proposal using the maximum deal with or not this critique?

Answer:

Rescale the data so that (1) (i.e., torture) gets 0 or 2 points, (2) gets 0 or 4 points, (3) gets zero or 6 points, and (4) (i.e., disappearances) gets zero or 8. If the data fit perfectly the Guttman assumption, then if a country-year gets is scored for disappearances, it would have all levels (1)-(3) and hence a total of either. With the new scoring system it would also have a score of eight. Note that things would get more complicated with a 0, 1, or 2 scale, instead of the 0 or 2, but the logic would be the same.

The logic is then not to count multiple acts against an individual person separately but to only count the most severe act of physical integrity violation.

149. One common guideline used in doing a typology, say of different ethnic groups in a country, is that the system be exhaustive and exclusive. In general fuzzy set approaches argue that exclusivity is not necessary and even in most cases not desirable. Suppose there are two ethnic concepts “white” and “black.” In fuzzy set one could be a .4 member of white AND .4 member of black. Discuss the extent to which various datasets on ethnicity (e.g., Fearon 2003; Chandra 2008) assume coding of ethnic groups is exclusive. Discuss how this plays a central role in the widely used ethnic fractionalization index: $F = 1 - \sum_{i=1}^n p_i^2$ where p_i are the population shares of each ethnic group.

Answer: Because fuzzy logic does not think strict dividing lines are good practice, it naturally will allow, and even encourage, partial membership in multiple ethnic groups. Because it is not probability based, there is no need for things to add up to one.

The fractionalization index *assumes* that membership in ethnic groups is (1) zero or one, and (2) that you cannot be a member of two ethnic groups at the same time. In short the sum of the population shares must be one.

150. Fearon (2003) has proposed an important concept of “ethnic group.” Here is the core of his concept. What is the structure used for this concept?

Another approach to definition—in several ways more useful for the purpose of constructing a list by countries—is to employ the idea of “radial categories” advanced by linguists and cognitive scientists (Lakoff, 1987; see Collier and Mahon, 1993, for a discussion with respect to political science). In practice, people may understand the meaning of a concept X by reference to prototypical cases. Less prototypical cases may not share all the features of a prototype, and yet still be validly classed as Xs, at least in some circumstances. For example, the prototypical ethnic group has the following features: 1. Membership in the group is reckoned primarily by descent by both members and non-members. 2. Members are conscious of group membership and view it as normatively and psychologically important to them. 3. Members share some distinguishing cultural features, such as common language, religion, and customs. 4. These cultural features are held to be valuable by a large majority of members of the group. 5. The group has a homeland, or at least “remembers” one. 6. The group has a shared and collectively represented history as a group. Further, this history is not wholly manufactured, but has some basis in fact. 7. The group is potentially “stand alone” in a conceptual sense—that is, it is not a caste or caste-like group (e.g., European nobility or commoners). . . . In assembling the list discussed below, I am looking for groups that meet the “prototype” conditions as much as possible. This implies that I allow groups distinguished from others in the same country primarily by religion provided that they meet condition 1 (membership has a strong descent basis) and condition 2 (self-consciousness as group). It also implies that I do not count castes in South Asia as ethnic groups, even though I readily admit that they share an important “family resemblance” to ethnic groups through the descent criterion, and could be validly considered as ethnic groups in some research designs (Horowitz, 1985; Chandra, 2000). I believe that a large majority of the groups in the list discussed below meet the conditions for a “prototypical” group fairly well, although for a number of cases, especially in Asia and Africa, the extent to which 2, 4, and 6 are met is unclear. These continents have many groups that are identified by some language commonality, which in most cases does mark some cultural similarity. But the extent of their “groupness,” or sense of common identity (conditions 2, 4, and 6) is not clear from the sources I have been able to consult. (Fearon 2003, 201-2).

Answer:

It appears that he is using an implicit family resemblance structure in that not all seven characteristics must be present to be coded as an ethnic group.

Chandra and Wilkinson have this to say about Fearon: “In an improvement over the other two data sets, Fearon (2003) does provide a conceptual justification for his count. He attempts to include groups that fulfill as many of the following prototypical criteria as possible: First, membership is reckoned primarily by descent. Second, members are conscious of group membership. Third, members share distinguishing cultural features. Fourth, these cultural features are valued by a majority of members. Fifth, the group has or remembers a homeland. Sixth, the group has a shared history as a group that is “not wholly manufactured but has some basis in fact. Seventh, the group “is potentially stand alone in a conceptual sense – that is, it is not a caste or caste-like group” (p. 201). . . . Nor is it clear how many prototypical criteria a group must satisfy to be included or how a coder should decide between multiple candidate groups on multiple

dimensions that fit the prototypical criteria. Why, for instance, was the category Jat (included in Atlas Narodov Mira but not in Fearon's work [2003]), which appears to meet the first six criteria but not the seventh, not chosen over the category Punjabi, which appears to meet the first, third, fourth, and fifth criteria but not the second, sixth, and arguably, seventh? Some of the groups included in Fearon's count do not meet several of the conditions. Hindi speakers, for instance, are not a group in which members are conscious of group membership, share distinguishing cultural features that are valued by a majority of members, and have or remember a homeland" (2008, 531).

151. In literature on the concept of ethnicity, perhaps the biggest problem is defining the secondary-level dimensions that are used to conceptualize ethnicity. Some commonly used dimensions are religion, language, and race. Discuss what the complete list should be. Should it include factors like class or ideology?

Answer:

Here is one answer: "What is ethnic identity? Since the publication of Horowitz's (1985) *Ethnic Groups in Conflict*, there has been a convergence among comparative political scientists on which identities we classify as ethnic. For Horowitz, ethnicity is an umbrella concept that "easily embraces groups differentiated by color, language, and religion; it covers 'tribes,' 'races,' 'nationalities,' and castes" (Horowitz 1985, 53). Much of the recent theoretical literature on ethnic politics explicitly follows this umbrella classification (e.g., Varshney 2002, Chandra 2004, Htun 2004, Wilkinson 2004, Posner 2005). Even more importantly, the four principal datasets on ethnic groups that constitute the foundation for cross-national empirical studies of the effect of ethnic identity in comparative politics - the Atlas Narodov Mira (Bruk and Apenchenko 1964), Alesina et al.'s (2003) dataset on ethnic groups in 190 countries, a comparable count of ethnic groups in 160 countries (Fearon 2003), and the Minorities at Risk project (<http://www.cidcm.umd.edu/inscr/mar/>) - also generally employ this umbrella classification. Only some quibbles remain on the margin about whether castes should be excluded (e.g., Fearon 2003) or retained (e.g., Bruk & Apenchenko 1964, Varshney 2002, Chandra 2004, Htun A 2004, Wilkinson 2004, Posner 2005) and whether region and clan should be included." (Chandra 2008, 397-98)

152. One of the key guidelines for constructing concepts involves thinking about causal relationships *within* concepts. There is a huge literature on the concept of "ethnicity." Discuss Chandra and Wilkinson's figure 1 (2008, 524) on their concept of ethnicity. Which of the various factors listed does not really involve any causal relationships with outside variables?

Answer:

The "structure" factor is the only which really is *only* and *exclusively* about ethnicity. All the others involve others causal variables. For example, see the discussion of ECI measure and its application to India; ethnic group variable is an interaction between some measure of ethnic "structure" and colonial practices.

"At the broadest level, we can imagine the term ethnicity as encompassing two families of concepts - the structure of ethnic identities and the practice of ethnic identification. Ethnic structure refers to the distribution of descent-based attributes - and, therefore, the sets of nominal identities - that all individuals

in a population possess, whether they identify with them or not. Ethnic practice refers to the act of using one or more identities embedded in this structure to guide behavior. In other words, it refers to the set of activated identities that individuals employ in any given context. The set of activated ethnic identities for any given country is typically a subset of the identities contained in the ethnic structure.” Chandra and Wilkinson (2008, 523)

153. Explain how Chandra and Wilkinson’s (2008) apply Posner’s (2004) principle of *politically relevant* ethnic groups in their two measures ECI and EVOTE.

Answer:

Both these measures involve how ethnic group distinctions are politically mobilized in some manner other another, i.e., they have been made politically relevant by some actor(s): “At the broadest level, we can imagine the term ethnicity as encompassing two families of concepts – the structure of ethnic identities and the practice of ethnic identification. Ethnic structure refers to the distribution of descent-based attributes – and, therefore, the sets of nominal identities – that all individuals in a population possess, whether they identify with them or not. Ethnic practice refers to the act of using one or more identities embedded in this structure to guide behavior. In other words, it refers to the set of activated identities that individuals employ in any given context. The set of activated ethnic identities for any given country is typically a subset of the identities contained in the ethnic structure” Chandra and Wilkinson (2008, 523).

154. For German speakers. Opp (2005) is a very rare methods textbook that devoted significant attention to concepts – most textbook only look at measurement; it is also a rare textbook that devotes a whole chapter to teaching logic – most research design and methodology textbooks do not discuss this at all. In Opp’s discussion of concepts (chapter 4) he distinguishes between (1) “Analytische operationalisierung” and (2) “empirische operationalisierung.” Discuss the extent to which (2) corresponds to the standard latent variable model of concepts and (1) corresponds to what the concept book calls ontological concepts.

155. “Any definition that requires a combination of characteristics captures only a subset of most of the identities that comparative political scientists classify as ethnic” (Chandra 2008, 413). What is the implicit assumption about concept structure that Chandra is making if this statement is to be true.

Answer:

She is clearly taking about a necessary condition structure: “Although I have discussed each characteristic individually, most definitions of ethnic identity incorporate various secondary characteristics in addition to the primary characteristic of descent. Any definition that requires a combination of characteristics captures only a subset of most of the identities that comparative political scientists classify as ethnic. This is because, as shown above, each characteristic, taken singly, captures only a subset of these identities. Because any one of the defining characteristics discussed above captures at best a subset of the classification that we started with, any combination of characteristics will capture a still smaller subset. Figure 1 illustrates this point” (Chandra 2008, 412–13).

156. In survey research there are often major differences depending on the how the question is worded. For example, a classic article by Rugg in 1941 found differences of up to 20 percent of two questions “that seem logically equivalent.” (Holleman 1999, 210), “Should the USA forbid public speeches against democracy” versus “Should the USA permit public speeches of democracy.” One of the main hypotheses in the literature is that there are different scales for the two responses. Holleman expresses this clearly: “The main issue is whether questions worded differently, although conceptually equivalent, measure similar attitudes (a test of the different attitudes hypothesis) and, if so, whether the similar attitudes are expressed on similar scales (the different scales hypothesis)” (Holleman 1999, 213). She finds empirical support for the two scales hypothesis.

Using fuzzy logic discuss whether these the response of yes to one question is the equivalent to the answer of no on the other using what you know about the fuzzy logic of negation. Does your answer suggest that perhaps fuzzy logic scaling or concepts would be appropriate here.

Answer:

One of the principles of fuzzy logic is that “poor” does not necessarily equal “not wealthy.” Hence it might be the case that “not forbidden” is not necessarily equivalent to “permitted.” The fact that empirically two scales are found might suggest that a fuzzy logic approach might be better.

157. The concept of customary international law has provoked much discussion. Traditionally the concept has two secondary-level dimensions “state practice” and *opinio juris* (“the practice is required by, or consistent with, prevailing international law” (Kirgis 1987, 146). Thus international law faces the same problem as concept-builders in thinking about how to structure the relationship between these two defining dimensions. Discuss Kirgis’s approach, it is necessary condition or family resemblance?

Answer:

Kirgis clearly argues that there cases where if the weight of one secondary-level dimension is larger enough it can *substitute* for lack of state practice. Human rights law would be an example.

158. The GTD (global terrorism database) database (CETIS 2007) uses a hybrid concept of terrorism involving 3 necessary conditions and then 2 of 3 other conditions for an incident to be considered terrorist. (1) Discuss whether various kinds of Mafia violence could be considered terrorism under this concept. (2) Discuss if nonviolent demonstrations would count. (3) One important aspect of concept construction is considering the negative pole or phenomenon that do not fall under the concept. The coding manual *implies* that insurgency is different from terrorism, e.g., “Appendix A: guidelines for differentiating between insurgency and terrorism,” but it does not define or conceptualize “insurgency”; how might this be an issue in studying terrorism and, say, civil war? (4) Discuss the secondary-level dimension “violates international humanitarian law of war.”

Answer:

Mafia activities could count because while they fail on one of the 2 out of 3 conditions (economic motives only) they can fulfill the other two conditions. Also there are coding categories for “criminal groups” (p. 32).

“Pacifist”/Anti-War is one possible category of terrorist group.

In addition to appendix A there is a variable “alternative designation” for incidents which are not considered terrorist, which include categories “Insurgency or guerilla action,” and “Internecine conflict action.” It is not at all clear what the relationship is between terrorism, insurgency, state breakdown, and civil war.

159. Democracy is a key variable in the theories about civil war. Vreeland (2008) discusses how the polity coding of anocracy is problematic for this use. Explain why these problems make sense given the original goals of the polity concept (Gurr 1974).

Answer:

Gurr (1974) was interested in the stability of regimes, and by consequence regime change or viability. A country in civil war can be considered and coded as non-stable.

160. One of the new guidelines for concept construction added by Goertz and Mazur (2008) says to focus attention on the terminology or word used for the concept. One thing that can happen over time is that the word used or the meaning of the word-concept shifts over time. Discuss how this has been the case of the polity concept of “anocracy,” which is part of the three core concepts of the polity measure, democracy, anocracy, and autocracy. Go to the original Gurr (1974) and see what he meant in the 1970s and contrast that with what anocracy means today.

Answer:

Anocracy for Gurr (1974) largely meant “anarchy”, for example, see his table 2. From the Greek roots anocracy means “absence of rule.” For Gurr it means “absence of power or control” (p. 1487, footnote 11). Today anocracy means a hybrid or mixed regime, one with both democratic and authoritarian characteristics.

161. The concept of “civilian power” engages the nature of foreign policy in countries like the EU and Japan (e.g., see Maull et al. 2006; Smith 2006). Discuss how the adjective “civilian” works in this concepts+/-adjectives. For example, how does it modify the concept of power? Also discuss the role of the negative pole in this concept.

Answer:

Civilian is clearly discussed as the opposite of “military.” Note that many discussions of power would include nonmilitary forms of power influence.

162. Some key concepts are basically defined in a negative way (e.g., see exercise 161 on “civilian” power). A good example of the issues involved is the debate over the “democratic deficit” in the EU (see Moravcsik 2002; Follesdal and Hix 2005). In particular while from the perspective of concepts+/-adjectives one seems to be taking away dimensions from the concept of democracy, in practice “democratic deficit” is often defined without a clear concept of democracy. Discuss

the (implicit) concept of democracy used by various authors. Is it defensible or common as a stand-alone concept of democracy?

163. A very difficult design decision in constructing concepts is whether to include potential causes or effects of the concept in the concept itself. Diamond and Morlino (2004, 2005) discuss various dimensions of the “quality” of democracy. Some of these might be better thought of as potential causes or effects of democracy. For example, they discuss how equality or education is important in the concept of a high-quality democracy. Discuss the various advantages and disadvantages of including dimensions such as equality or education in the concept of (quality of) democracy. Similarly, one can think about the effects of democracy: do Diamond and Morlino include effects in the concept of quality of democracy that would be independent variables in important analyses where democracy is a key dependent variable?

Answer:

One problem with the Diamond and Morlino book is that it is purely about the quality of democracy. There is no sense in which this concept is embedded in some theoretical or empirical program looking at the causes or effects of democracy. If one wants to discuss the causes of democracy (or quality of democracy) one should think hard before including potential independent variables in the concept itself. Also, they define a quality democracy as one with effective rule of law and effective administrative outputs. To what extent does one want to define democracy quality in terms of quality of bureaucracy? Would it be better to keep these as separate concepts? This way we can explore the causal relationships between the two.

164. Morrow and Jo illustrate how the Possibility Principle can lead to specific coding decisions: “Violations are not possible for some issues in some cases because the sides either lacked the capability to carry out such violations or no fighting of the type in question occurred during the war. All the fighting in the Hungarian-Allies War of 1919 was on land, making violations of conduct on the high seas impossible. . . . These cases receive missing value codes of -9 for all five measures of compliance” (Morrow and Jo 2006, 99). Discuss whether these cases should be coded as “missing” or something else.

Answer:

It would seem to confuse cases where the data is really missing with cases where the coding scheme does not apply.

165. There is a very large literature in American politics on the concept and measurement of racism, and it is a topic that arouses much controversy: “Is white opposition to policies driven by racial prejudice or is it grounded in race-blind ideological principles?” (Feldman and Huddy 2005, 168; this is first sentence of the article). There are many aspects of this debate of interest regarding concepts. (1) One interesting aspect is the variety of terminology, such as “overt prejudice,” “new racism,” “racial resentment,” “old-fashioned racism,” and “symbolic racism.” In addition there are related concepts such as “prejudice” and “discrimination.” In particular the use of adjectives is of interest: discuss the issues and implications of the use of the concept “symbolic racism” (e.g., Tarman and Sears

2005) as a particular use of concepts+adjectives. Notice as well the relevance of the negation guideline given in the use of adjectives. (2) The negation guideline suggests that much can be gained by focusing on the opposite concept. Much of the debate revolves around the the concept of a “principled conservatism” which argues against policies such as affirmative action but which is not racist (Sniderman et al. 1996). One could focus on that concept instead of directly on racism. For example, if one is *principled* then those principles should apply across groups by gender and sexual orientation and not just race. (3) It is important to think about causal relationships in concepts. One might suggest that, at least in the case of the south, principled conservatism is a consequence of racism, given that race was a central component of Southern culture and politics for centuries. See Quillian (2006) for a nice survey of the political science, sociology, and psychology literatures.

166. A very standard problem in measure creation is to combine the data on two or more secondary-level dimensions. Often this involves dimensions that have different scales and then some way of structuring them together mathematically. For example:

we devise a new way to use the information of civil war duration and deaths for the two-stage regression analysis. The duration and casualties of civil wars are correlated, and it is theoretically inappropriate to estimate equation (2) for only one of them. Therefore, we combine the two characteristics of civil war into one, Civil War Destructiveness Index, by adding their standardized values. Before standardization, civil war duration is measured by the maximum duration in number of days of the war. Civil war deaths are measured by the total number of deaths experienced by the nation, divided by population. (Kang and Meernik 2005, 101)

Discuss (1) the importance of differences in variances between the two component parts in constructing the overall measure, (2) whether skewness in the data matter (often social science data are often heavily skewed), (3) the alternatives to standardizing the two scale, and (4) whether one should multiply or add the component parts.

167. One serious issue with dichotomous data is the potential for serious heterogeneity in the zero or one category. This is particularly likely to be a problem in zero category. The issue of heterogeneity arises almost by definition with nonordered, categorical data. For example, quantitative studies of international conflict that look at the outcome of the dispute face variables that have anywhere from 3 to 9 categories. Often these can be reduced to settlement/compromise, win, draw. If the focus is, say, settlement or compromise then there is a tendency to code that as one and lump win and draw together as zero. Discuss the merits of this procedure. What would be alternatives? See Laporte, Collier, and Seawright (2007) for a general discussion of the advantages and disadvantages of dichotomization.

Answer:

Lumping all these together in the zero seems particularly dubious when the causal mechanisms producing these zeros are likely to be quite different.

Within the context of the conflict literature and the militarized disputes dataset, it might make sense to just include draw/stalemate as the contrasting case since this constitutes often 70+% of the zero cases (e.g., Goertz et al. 2005).

This choice could well be brought into the research design and theory if the research were interested in making specific causal contrasts.

168. The book argues that basically all concepts should be considered continuous. However, there is an extensive literature on freedom and rights that argues that they are dichotomous (see Dowding and Hees 2003 for a continuous view). This may seem counter-intuitive since most people talk about “more or less” freedom; so the implicit view of most is that liberty and freedom are continuous. Notice that in the second quote he talks about “possible” and “impossible” as dichotomous. Contrast this with the Possibility Principle which clearly sees possibility as continuous. Notice that in Kramer’s view “overall liberty” is continuous, but individual liberties are dichotomous.

Are particular liberties similar to overall liberty in being scalar or partitive? In other words, can each particular freedom exist to varying extents? Can somebody be free-to- φ to a certain degree, and be less free-to- φ or more free-to- φ than somebody else? With only one minor qualification, the current essay will maintain that the answers to these questions are negative. The existence of any particular liberty, as opposed to the extent of anybody’s overall liberty, cannot vary cardinally or ordinally. This essay sides firmly with Ian Carter, then, who writes that ‘[t]he freedom to do x is not a matter of degree; one either is or is not free to do x ’. Carter aptly oppugns ‘the claim that specific freedoms are a matter of degree (i.e., that one can be more or less free to do x)’ (Carter, 1999, 228, 233, emphasis in original). Hillel Steiner robustly espouses a similar view: ‘The notion of degrees of freedom to do an action is superfluous, misleading and descriptively imprecise’ (Steiner, 1983, 78). (Kramer 2002, 231)

In being non-scalar, ‘free’ and ‘not free’ in discussions of particular actions and types of actions are on a par with ‘possible’ and ‘impossible’. When P has been able to perform X and has now become able to perform X in some novel manner, we cannot correctly state that his performance of X is now more possible than before. ‘Possible’ applies in an all-or-nothing fashion, as does ‘impossible’. Instead of declaring that the performance of X by P is now more possible than previously, we ought to declare that the performance of X by P is now possible in more ways than previously. (Kramer 2002, 242)

169. Describe Kramer’s (2002) view of the concept of “liberty” or “freedom” as a three-level concept, where the levels are (1) overall liberty, (2) individual liberty, and (3) token liberty. What is the structural principle used at each level?

Answer:

The secondary-level dimensions of individual liberties which combine via family resemblance to constitute overall liberty. This produces a continuous basic-level concept, e.g., 3/5 particular liberties defines .60 as the level of overall liberty. Token liberties-data/ indicator level-are specific occasions where individuals can have or not (dichotomously) liberty. Kramer argues that if an individual token has liberty then the secondary-level dimension has liberty (p. 240). Hence he is implicitly using a best-shot structure.

170. A very difficult conceptual and methodological problem is dealing with norms, particularly norms that have the logical structure of rights, e.g., human rights. This problem has exercised me a great deal and in fact resulted in a book (Goertz *International norms and decision making*; a large part of that book was devoted precisely to analyzing the concept of a norm). (1) Discuss the concept of a right (contrasting it with prohibitions and obligations). (2) The positive and negative poles are interesting here in terms of behavior: do you focus on the positive exercise of rights (e.g., voting) or on the absence of the exercise of the right. This has theoretical consequences because in the former case you focus on what factors in addition to rights lead to the use of rights, while in the latter you focus on factors that eliminate the right itself in practice. (3) Rights are about *possibility*, relate this to the Possibility Principle of case selection and necessary conditions in general. Dowding and Hees (2003) is a very nice discussion of many of these issues. For measurement see also Rosenbaum (2000) and Carter (2000).

171. Sometimes concepts are basically defined via typologies. This raises the question of there is some kind of basic level concept. The idea of a positive or negative pole makes little sense if the typology is really of different kinds, i.e., apples and oranges. As the following two questions also illustrate, a key assumption in concepts is that they are causally homogeneous: they have the same causes and effects. The dominant Correlates of War (see also the ATOP alliance data set, Leeds et al. 2002) defines alliance immediately (Singer and Small 1966; Gibler and Sarkees 2004) in terms of three types of alliance: (1) defense, (2) neutrality-nonaggression, (3) entente. Discuss whether these three types of alliance have potential problems of causal heterogeneity. For a concrete example of this criticism see Long's (2003) analysis of the alliance-trade relationship.

Answer:

Many have had their doubts about whether the neutrality-nonaggression alliances belong. Typically in the liberal peace literature the alliance variable excludes them. See the ATOP coding manual (Leeds 2005) for additional reservations.

172. The concept of a welfare state is used as an ongoing example of a family resemblance concept. In particular, it is good because the use of expenditure data illustrates the completely fungibility and substitutability of the secondary-level dimensions. It could be that this assumption of substitutability masks causal heterogeneity. See Bonoli (2007) who argues that that causal processes dealing with "new social risks" (e.g., women's participation in the labor force and child care) are quite different from those dealing with classic welfare policies (e.g., unemployment insurance). How should you change the concept of the welfare state? Add an adjective? See the next question using work from Little for the same issue in a philosophical context.

173. A central guideline in building concepts is the consideration of causal relationships involving secondary-level dimensions of a concept. The causal relationships that involve the various secondary-level dimensions open up the possibility that there is significant causal heterogeneity in concepts and hence that causal generalizations are likely to be problematic. See the previous question on

the welfare state for a social science example. Little appears to be making this argument:

Another way to state my position is to consider whether there are social kinds, analogous to natural kinds. A natural kind is a set of entities that share a common causal structure, and whose behavior can therefore be predicted on the basis of the laws that govern the behavior of such entities (Putnam, 1975b)... I deny that any social concepts serve to identify social kinds in the strong sense outlined above. Instead, social concepts function as ideal types or cluster concepts, permitting us to classify a range of diverse phenomena under a single concept. The notion of a cluster term captures many scientific concepts-terms that encompass a variety of phenomena that share some among a cluster of properties (Putnam 1975a, 50-54). An ideal-type concept is a complex description of a group of social phenomena that emphasizes some features and abstracts from others (Weber 1949). It is apparent that generalizations and predictions based on cluster concepts and ideal types demand a great deal of care. Since the entities that fall under such concepts do not share a homogeneous causal structure, we cannot infer that instances of the concept will behave in the typical way... The metaphysical counterpart, then, to my view that there are no governing social regularities among social phenomena, is that there are no genuine social natural kinds. (Little 1993, 190-91).

Discuss Little's claims about "social kinds" versus "natural kinds." Also, explore the extent to which "cluster concepts" are the same as family resemblance concepts.

174. Thomas Franck is well-known for his work (e.g., 1988, 1990, 1992) on the importance of "legitimacy" in international politics. Discuss the theoretical relationship between the concept of legitimacy and four factors related to it. Is the relationship best seen as (1) indicator, (2) ontological, (3) causal, and if causal in which direction do the causal arrows go? For example, Franck says "one may postulate four indicators: *pedigree*, *determinacy*, *coherence*, and *adherence*... The content of these four indicators of legitimacy ..." (Franck 1992, 51).

Answer:

In the 1992 article, Franck uses the term "indicator." However, much of the discussion could lead one to see these four factors as *causes* of legitimacy.

175. Typically, one attacks theoretically and empirically concept issues from the positive pole first. However, sometimes it might make sense to really focus on the negative. For example, the concept of "judicial independence" is key in the literature on comparative judicial systems and democratization. Evaluate Larkins (1996) proposal to focus on the dimensions of judicial *dependence* as the best way to attack the problem. Also, discuss whether the necessary and sufficient condition or family resemblance approach makes more sense.

Answer:

The answer to the second question about concept structure informs the response to the first. Typically, there are many ways in which governments can make judiciaries dependent. Usually you only need one to remove judicial independence; i.e., using the contrapositive of the necessary and sufficient condition

structure means that the absence of all the means of judicial dependence is sufficient for judicial independence.

176. Sometimes the “positive” pole of interest is itself defined in negative terms. The concept of an “antisystem party” has a long history in comparative politics, notably Sartori (1976): “a party that would change, if it could, not the government, but the system of government” (cited in Capoccia 2002, 18). Discuss the problems of defining what the “system” is that forms the positive pole. Frequently, “system” means “democracy.” Capoccia (2005, 2002) discusses two types of anti-system parties one “ideological” and the other “relational.” Relational means distant and extreme parties in ideological space. Discuss the relationship between “anti” in terms of the ideological space of the parties versus the characteristics of the political system itself. How would a family resemblance perspective on democracy be more problematic than a necessary and sufficient condition one in looking at system as democracy?

Answer:

See Capoccia (2002) for an extended discussion. (1) Inherently it is going to be hard to define what the “system” is. (2) One party could be distant ideologically from the center and not be opposed to the system of government itself. (3) Using the necessary and sufficient condition view of democracy makes it easier to think about antisystem parties since if they are opposed to any secondary-level dimension of democracy then it is an antisystem party.

177. In many debates the role of the negative pole plays a key role. One important point in the debate between Duffield (2003) and Koremenos et al. (2003) is the role of “centralization” in the study of international institutions. What is the opposite pole? What would be the opposite pole in the study of domestic institutions?

Answer:

Duffield and Koremenos et al. assume that the opposite pole of centralization is “delegation;” for example, “Duffield makes a good point in stating that greater focus on delegation may provide a way to further refine the concept of centralization, because delegation and centralization are indeed closely related” (Koremenos et al. 2003, 434).

It is likely that within the literature on domestic institutions design (e.g., constitutions), the opposite pole would be “federalism.”

178. A key issue when creating concepts is their eventual theoretical and policy usage. Of great policy importance today is the concept of “indigenous people” (see Corntassel 2003 for an excellent review of different concepts). Clearly, one policy goal is protect indigenous peoples. Discuss how this influences one’s definition. Notice that many important international organizations such as the UN, ILO, and the World Bank have developed definitions that have practical and legal import.

179. One can think of the negative pole as something with a separate set of dimensions than the positive pole. For example, Geddes (1999) defines three types of dictatorships as personalist, military, single party, or amalgams of the pure types. Alvarez et al. (1996, 16–19, see also Cheibub et al. 2010) have three dimensions of “dictatorship” whether it is mobilizing or exclusionary, how many

formal centers of power it has (executive, legislative, and parties), and whether it rules within a framework of law or in some more arbitrary manner. How could you consider these as a concepts+/adjectives, with democracy as the positive pole concept?

Answer:

Basically one can consider these as analogous to “parliamentary democracy.” The absence of the secondary-level dimensions of democracy defines an autocracy and then one adds adjectives such as “military,” “single party,” etc. See Collier and Adcock (1999) for a discussion of this general issue.

180. One issue not much discussed in the book is the distinction between various kinds of scales, ordinal, nominal, interval, and ratio. This is related to the issue of dichotomous versus continuous concepts and measures. What is the error in the following quote in this context? Use the polity measure of democracy in your answer.

[W]hile some regimes are more democratic than others, unless offices are contested, they should not be considered democratic. The analogy with the proverbial pregnancy is thus that while democracy can be more or less advanced, one cannot be half-democratic: there is a natural zero-point. (Alvarez et al. 1996, 21)

Answer:

Whether a concept or measure has a zero point is an independent issue. There are two questions. (1) Does the concept/measure have a zero point? (2) If so where is the zero point? It is an open question whether many concepts or measures of democracy are interval (i.e., no zero point) or ratio (there is a zero point). See Collier and Adcock (1999) for a good discussion of the issues involved in dichotomous versus continuous concepts and measures.

It seems plausible that the polity *concept* of democracy does have a possible zero point (i.e., completely nondemocratic). However, most people treat the measure as interval when changing the scale by adding 10 (which is standard practice). The Alvarez et al. remark deals with *where* the zero point should be if it were a ratio scale. Implicitly the polity scale would put it at -10. Alvarez et al. would place the zero in the middle dividing democracy from autocracy.

181. Analyze in three-level terms Vanhanen’s concepts of “ethnic heterogeneity.” In particular, contrast the issue of redundancy (or substitutability) at the indicator level and the secondary level.

The measurement of ethnic division therefore is based on three types of ethnic groups: (1) ethnic groups based on racial differences, (2) ethnic groups based on linguistic, national or tribal differences, and (3) ethnic groups based on stabilized old religious communities. Thus we have three operationally defined indicators to measure three dimensions of ethnic division. In each dimension, the level of ethnic division will be measured by the percentage of the largest ethnic group of the country’s total population. Together the three percentages measure the relative degree of ethnic homogeneity, and the inverse percentages measure the degree of ethnic heterogeneity. The three inverse percentages of ethnic heterogeneity are combined into an Index

of Ethnic Heterogeneity (EH) by summing the three percentages. This index is used as the principal operational substitute for the hypothetical concept “ethnic division.” (Vanhanen 1999, 59)

Contrast that with his three-level concept of “ethnic conflict.” What is the three-level structure here? In particular, in terms of combining the two secondary-level dimensions of “violent ethnic conflict” and “institutionalized ethnic conflict” what is the role of redundancy?

Answer:

Vanhanen justifies his procedure:

Is it justified to combine the three dimensions of ethnic heterogeneity into an index in this way or do the dimensions differ too greatly from each other? My argument is that different forms of ethnic division strengthen each other and that, it is justified to sum the percentages. For example, if the population of a country is divided into separate ethnic groups not only by language or nationality, but also by clear racial or religious division, the degree of ethnic heterogeneity is higher than in a country in which the population is divided into separate groups only by language or religion. Besides, I am not especially interested in the affects of any particular ethnic division, I am interested in the total level of ethnic heterogeneity. (Vanhanen 1999, 59)

If one thinks that redundancy is acceptable because each factor reinforces the other, one might think of multiplication instead of addition at the secondary level. Also, one wonders why the argument he uses at the secondary level cannot also be used at the indicator level where he applies the maximum, thus signaling complete substitutability.

When combining his two secondary-level factors of ethnic conflict he adds them. But since he argues that they are two indicators of the same thing, the mean would be more appropriate.

Because the two scales of institutionalized and violent ethnic conflict are intended to measure the same phenomenon from two different perspectives, it is reasonable to combine the scores of the two dimensions into a combined Index of Ethnic Conflict (EC). It is done simply by adding the scores. This means that the value of EC can vary between 0 and 200. This index is used as the principal empirical indicator of ethnic conflict in this study. (Vanhanen 1999, 62)

182. Describe the three-level structure of Dasgupta’s concept of human well-being or destitution (Dasgupta 1990; Dasgupta and Weale 1992). What is its structure? What are the relative weights attached at the indicator and secondary levels? If you used Nussbaum’s approach how would you change the structure?

Answer:

The structure is very similar to the one used by Schmitter for corporatism, since it uses the sum of the ranks. The secondary-level level variables such as “health,” “education,” “wealth” will not be equally weighted in general unless they have the same number of indicators. More generally, is it reasonable to ranking literacy equally with per capita income?

Regarding Nussbaum’s concept of human well-being, one would at a the least take the minimum of the ranks between the secondary-level dimensions. At the

indicator level one needs to consider the substitutability between factors. The sum might be a reasonable procedure.

183. Munck and Verkuilen (2002) stress the importance of considering the “redundancy” between indicators or secondary-level dimensions. Think about aggregating at any level via (1) mean, (2) sum, (3) maximum. For which is redundancy generally good? Generally bad? Use the example of the welfare state, the polity measure of democracy, and Skocpol or Ostrom (in chapter 9) in your answer. (See the chapter 4 questions for a related question about redundancy in the context of the polity measure and concept of democracy)

For example, Munck and Verkuilen have this to say about redundancy: “attributes at the same level of abstraction should tap into mutually exclusive aspects of the attribute at the immediately superior level of abstraction. Otherwise the analysis falls prey to the distinct logical problem of redundancy.” (p. 13) “The problem of redundancy is evident in two indices. Polity IV falls prey to this problem because it identifies a pair of attributes (competitiveness and regulation of participation) that grasp only one aspect of democracy, the extent to which elections are competitive, and another pair of attributes (competitiveness and openness of executive recruitment) that also pertain to a single issue, whether offices are filled by means of elections or some other procedure.” (p. 14)

Answer:

Redundancy is good and usually assumed when using the mean. Typically there one is using different indicators of the “same thing.” Hence you want a high correlation between them. For the sum, redundancy is bad because it leads to double counting, for example, if one would never want to double count spending data in a measure of the welfare state. For the maximum, redundancy is usually fine and desirable, however in contrast with the mean, often low correlation between factors is desirable, often you want to tap the *different* ways (i.e., substitutability) for a given factor to be fulfilled.

184. Consider the “Competitiveness of political participation” dimension of the polity measure of democracy (Jagers and Gurr 1995, 472, reproduced in the context book as figure 4.1) given in the table below. Consider how the negative pole (autocracy) and positive pole (democracy) are coded. Think about the universally used measure “Democracy -Autocracy” and the scale values that produces. What is the asymmetry between the positive and negative poles? How would you make it symmetric? The same question can be asked of the “Constraints on the Chief Executive” dimension. Ignore the substantive nature of the dimensions and just look at how things are scored.

Answer:

Once you do the Democracy-Autocracy operation, this dimension then goes, -2, -1, 1, 2, 3. Notice then that democracy can achieve a maximum of 3 while autocracy can only get a -2. Since there are five levels one could have done -2, -1, 0, 1, 2.

185. Milner and Kubota (2005) discuss a number of important issues regarding concepts and measurement. (1) Discuss their measure of “open/closed trade regimes.” What is the strategy used for building the measure? (2) Contrast this with their

Table 3: The Polity numeric measure of democracy

Authority Coding	Democracy Weight	Autocracy Weight
I. Competitiveness of Political Participation		
(a) competitive	3	0
(b) transitional	2	0
(c) factional	1	0
(d) restricted	0	1
(e) suppressed	0	2

Source: Jagers and Gurr 1995, 472.

concept(s) of “economic crisis.” What is the strategy used for building these measures? Would it be better to have one or two economic crisis variables? What impact or role does the information that the two crisis variables are not correlated (i.e., $r = .01$) have on your argument?

Answer:

See Milner and Kubota (2005, 122–24). For the open/closed trade regime variable they use a family resemblance strategy by applying the m-of-n rule: if one of the four secondary-level factors is present then the variable is coded one. Compare this with the 3-of-4 rule used by Hicks for his welfare state analysis.

Milner and Kubota probably separated out the two economic crisis variables because of their low correlation. However, as the discussion of Skocpol in chapter 9 indicates that might in fact be a good thing for a single economic crisis variable. Of course, this does not necessarily mean that forming one economic crisis variable is better. One needs to examine closely the theory involved.

186. Table 2.4 gives four possibilities for combining AND or OR in three-level concepts. Examine Doner et al.’s concept of the “developmental state” (Doner et al. 2005, Table 1) and draw a figure of their three-level concept. Which of the logical combinations of Table 2.4 do you think fits best their concept?
187. The concept of “women’s interests” plays a central role in much research on women in politics. Evaluate the various dimensions scholars have given to the concept (e.g., Celis 2005). How are they structured? Is structure discussed?
188. Przeworski and his colleagues have proposed an influential concept and measure of democracy:

Operationally, a regime was classified [dichotomously] as a democracy if none of the four rules listed below applied

Rule 1: Executive selection: the chief executive is not elected.

Rule 2: Legislative selection: the legislature is not elected.

Rule 3: Party: there is no more than one party. Specifically, this rule applies if (1) there were no parties, or (2) there was only one party, or (3) the current tenure in office ended up in the establishment of a nonparty or one-party rule, or (4) the incumbents unconstitutionally closed the legislature

and rewrote the rules in their favor.

Rule 4: Type II error: a regime passes the previous three rules, the incumbents held office in the immediate past by virtue of elections for more than two terms or without being elected, and until today or the time when they were overthrown they have not lost an election. (Przeworski and Limongi, 1997, 178; see also Alvarez et al. 1996, Przeworski et al. 2000, chapter 1)

Rule 4 (called “Alternation” in Przeworski et al. 2000) only applies if “a regime passes the previous three rules.” Would anything change in the final dichotomous democracy codings if we just considered this a fourth rule? Explain.

Answer:

Nothing would change in the final dichotomous democracy coding. Because failure on any rule, including rule 4, eliminates the country as a democracy nothing is gained (except perhaps time) in the overall democracy coding by applying rule 4 only when a country passes rules 1-3.

189. An important concept in the study of international conflict is that of the “similarity” of regime types. One central hypothesis is that international conflict is more likely between dissimilar regimes. One can compare two countries on their level of democracy in at least two ways with a multilevel democracy concept: (1) via the similarity of the secondary-level dimensions or (2) via the similarity of the basic-level measure. Discuss if one procedure is more valid than the other. Does the necessary and sufficient condition or family resemblance nature of the concept matter? As a concrete example compare Werner (2000) with Bennett (2006) and their use of the polity measure of democracy.

Answer:

Similarity comparisons at the level of secondary-level dimensions with necessary and sufficient condition structures are not valid because the claim is that the absence of one dimension makes the a country a nondemocracy, independent of what is happening with other secondary-level dimensions. In general, similarity should be addressed at the basic level not using secondary-level dimensions because using secondary-level dimensions ignores how the concept is structured (see Bueno de Mesquita et al. 2005 for an extensive justification for examining the secondary-level dimensions individually).

190. Discuss the extent to which (if any) the two secondary-level factors-civil liberties and political liberties-of the Freedom House measure of democracy are equally weighted in the final measure. See <http://www.freedomhouse.org/research/survey2005.htm>.

Answer:

There is slightly unequal weighting because there are different numbers of indicators used in each secondary-level dimension and because the basic level is the sum of the two secondary levels. Also the two secondary-level factors are not exactly treated equal when trichotomized into the three categories “Free,” “Partly Free,” and “Not Free.”

191. Discuss how the political rights, civil rights and electoral democracy concepts and measures are made and how they relate to each other in the Freedom House

framework. See <http://www.freedomhouse.org/research/freeworld/2004/methodology.htm>.

Answer:

From the Freedom House web site:

In addition to providing numerical ratings, the survey assigns the designation “electoral democracy” to countries that have met certain minimum standards. In determining whether a country is an electoral democracy, Freedom House examines several key factors concerning how its national leadership is chosen.

To qualify as an electoral democracy, a state must have satisfied the following criteria:

1) A competitive, multiparty political system. 2) Universal adult suffrage for all citizens (with exceptions for restrictions that states may legitimately place on citizens as sanctions for criminal offenses). 3) Regularly contested elections conducted in conditions of ballot secrecy, reasonable ballot security, and in the absence of massive voter fraud that yields results that are unrepresentative of the public will. 4) Significant public access of major political parties to the electorate through the media and through generally open political campaigning.

The electoral democracy designation reflects a judgment about the last major national election or elections. In the case of presidential/parliamentary systems, both elections must have been free and fair on the basis of the above criteria; in parliamentary systems, the last nationwide elections for the national legislature must have been free and fair. The presence of certain irregularities during the electoral process does not automatically disqualify a country from being designated an electoral democracy. A country cannot be listed as an electoral democracy if it reflects the ongoing and overwhelming dominance of a single party or movement over the course of numerous national elections; such states are considered to be dominant party states. Nor can a country be an electoral democracy if significant authority for national decisions resides in the hands of an unelected power, whether a monarch or a foreign international authority. A country is removed from the ranks of electoral democracies if its last national election failed to meet the criteria listed above, or if changes in law significantly eroded the public’s possibility for electoral choice.

Freedom House’s term “electoral democracy” differs from “liberal democracy” in that the latter also implies the presence of a substantial array of civil liberties. In the survey, all Free countries qualify as both electoral and liberal democracies. By contrast, some Partly Free countries qualify as electoral, but not liberal, democracies.

192. One important guideline for concept-building is to think about the negative pole. Esping-Anderson (1990; 1999) focused attention on three “worlds” of welfare capitalism, which has informed 15 years of research. This view of the welfare state has three dimensions (1) socialist, (2) liberal, and (3) conservative. Evaluate Hicks and Kenworthy’s argument that instead of three dimensions there are two with (2) being the negative pole of (1):

we can characterize and differentiate welfare states in terms of the “progressive liberalism” and “traditional conservatism” of their policies and programs. The first of these two dimensions is fairly novel. It rearranges Esping-Anderson’s separate social democratic and liberal dimensions into two poles of a single dimension. (Hicks and Kenworthy 2003, 51).

193. Draw a figure describing the three-level character of the Hicks-Kenworthy (2003) concept of the welfare state. Compare the theoretical discussion of the dimensions of the welfare state with the results of the principal components statistical model. What are the possible options for the secondary-level dimensions?
194. The book only briefly mentions the idea of hybrid concepts and measures. One can define “hybrid” in this context to be concepts and measures that use both AND and OR at the same level. In terms of measures, this could be those that use both addition and multiplication. There exists numerous measures of corporatism (see Siaroff 1999 or Kenworthy 2003 for surveys). Examine Cameron (1984) who uses a hybrid measure. What is the concept model that leads to hybrid measures?
195. Discuss the King and Murray’s measure of “human security”. (1) Compare their analysis to Nussbaum’s view of human well-being outlined in chapter 1. (2) Evaluate their claim that they do not need to justify their weights because they are not using any.

According to our definition, a person is in a state of generalized poverty whenever he or she dips below the pre-defined threshold in any of the component areas of well-being. Our dichotomization of each component of well-being is based on the belief that there is a qualitative difference in life experience above and below the threshold. For example, the difference between not having enough food and nutrition to survive and having enough food is fundamentally different from the difference between having enough food to survive and having food that also tastes especially good.

A key advantage of our definition of generalized poverty is that it does not require a set of weights to be developed to equalize the different domains of well-being. Since a person missing even one of these essential elements for any part of a year would be considered impoverished, the only arbitrary element in the definition is the threshold for each domain of well-being. Moreover, the policy world has much experience with choosing threshold values for income and many other areas (such as to decide whether individuals qualify for certain programs). Although these thresholds are arbitrary and can be improved in theory in some ways (at the cost of simplicity), they are frequently used because they are fairly accurate reactions of peoples life experiences and are simple to use. In addition, small changes in these thresholds do not always produce as large changes in population-based indexes as weights would in an aggregate well-being index.

For example, we treat both (1) being tortured and (2) being tortured and starving, as impoverished and unacceptable conditions. Condition 2 may be harder to remedy than 1, but we do not have to decide how much worse 2 is than 1 in order to decide that the person is experiencing a state of generalized poverty. Similarly, few would argue that persons to be tortured four times in the next year are secure no matter how high their income. Rather, being tortured in the next year will put them in a state of deprivation or generalized poverty. The prospect of this outcome makes them insecure today. Of course, for analytical purposes other than defining human security, definitions of generalized poverty that include trade-offs between the level of achievement in one domain of well being versus another may be appropriate, particularly when individuals freely choose to balance some domains of well-being against others. Since we do not need to create and justify weights in combining domains, we can include as many other domains as the international community agrees on. For example, we can include education as a

domain of well-being, even though it was once not considered an essential element for having a minimal level of well-being. (King and Murray 2002, 594-95)

Answer:

Clearly they take a necessary condition view of the “human security” concept. They are in fact weighting each dimension, and could use fuzzy logic weights if they wanted.

196. Examine Hartzell and Hoddie’s (2003) concept of “power sharing” and the resolution of civil wars (one only need read pp. 318-21). What is the structure of the concept (necessary and sufficient condition or family resemblance)? How does substitutability play a big role in this concept?

Answer:

“An innovation of this study is to suggest that power sharing should instead be considered a continuous variable that ranges in value from zero to four with each increment representing an additional dimension of power sharing (political, territorial, military, and economic) specified in the rules governing the society. The greater the overall number of power-sharing dimensions specified, the more likely that peaceful relates among collectivities will endure.” (Hartzell and Hoddie 2003, 321) This clearly indicates a family resemblance structure.

“A second reason that the inclusion of multiple dimensions of power sharing in a negotiated civil war settlement proves advantageous to the prospects of long-term peace is that it serves as a source of protection against the failure to implement any single power-sharing provision of the settlement.” (Hartzell and Hoddie 2003, 321). This clearly indicates that substitutability is core to power-sharing.

197. Explicitly contrast Schmitter’s concept of corporatism with his concept of pluralism. To what extent is pluralism strictly the negation of corporatism?
198. Sometimes concepts should not build in causal hypotheses (e.g., see the discussion of militarized international rivalries in the book), evaluate Cohen and Pavoncello (1987) critique of Schmitter’s concept of corporatism based on the idea that there are causal hypotheses built into definition.
199. In *Resort to Arms*, Small and Singer (1982, 210) defined a civil war as “any armed conflict that involves (a) military action internal to the metropole, (b) the active participation of the national government, and (c) effective resistance by both sides.” This appears as a list concept. How can you ascertain, given that data are being collected, if the necessary and sufficient condition or family resemblance concept structure is being used? The same question can be asked of Sambanis (2004) who has an “operational definition” of civil war.

Answer:

Typically it is easy to see the necessary and sufficient condition structure even though it is not explicitly stated. If you examine how the data are actually collected almost always failure on one item of the definition means that the case is excluded. This means that each item is in fact a necessary condition.

200. The *Diagnostic and statistical manual of mental disorders* provides a many nice examples of how important decisions are made using mostly family resemblance concept structures. Choose some of the diseases on the list and analyze their structure.

http://www.psychnet-uk.com/dsm_iv/_misc/complete_tables.htm#Name

201. Critical to the construction and analysis of concepts is the underlying scale or continuum from the positive to negative poles. One way to argue for an underlying continuum is if the data have the structure of a Guttman scale (Guttman 1944). The CIRI measure and state on human rights violations has four categories of violation: (1) torture, (2) political imprisonment, (3) extrajudicial killings, (4) disappearances. If the data fit the Guttman requirements then each category is a subset of the lower level categories. For example, if a state does (2) then does (1); if it does (3) then it also does (2) and (1); if it does (4) then it does (1)-(3). Cingranelli and Richards (1997) argue that their data on physical integrity rights has basically this structure. Draw a Venn diagram illustrating what this looks like.

Cingranelli and Richards propose a quantitative measure where each of the four dimensions gets 0-2 on the level of violations in a given country in a given year; their final score is the sum of the scores of the four dimensions. Thus the worst performing states score 8, and the least human rights violating states get 0.

Addition is one way to structure the family resemblance concept. Another is the maximum. To make this simpler, assume that one can only score 0 or two on each dimension. Provide a rescaling of the four dimensions of the CIRI scale so that when you use the maximum to aggregate you would get *exactly* the same final score as the CIRI data *if* the data fit perfectly the Guttman requirements.

One problem is that the data do not exactly fit the Guttman requirements. For example, there are cases with “extrajudicial killing” but no “political imprisonment.” How would your proposed rescaling and use of the maximum deal with these cases? Do you think it is better or worse than using the sum.

Woods and Gibney (2009) critique the CIRI scale because it would count the torture, political imprisonment, and disappearance of a single individual three times. How does your proposal using the maximum deal with or not this critique?

Answer:

Rescale the data so that (1) (i.e., torture) gets 0 or 2 points, (2) gets 0 or 4 points, (3) gets zero or 6 points, and (4) (i.e., disappearances) gets zero or 8. If the data fit perfectly the Guttman assumption, then if a country-year gets is scored for disappearances, it would have all levels (1)-(3) and hence a total of either. With the new scoring system it would also have a score of eight. Note that things would get more complicated with a 0, 1, or 2 scale, instead of the 0 or 2, but the logic would be the same.

The logic is then not to count multiple acts against an individual person separately but to only count the most severe act of physical integrity violation.

202. Logging variables means that some variation in the data become much more important than other. When using raw FDI inflows instead of as a percentage

of GDP, FDI is usually logged (Chan and Mason 1992; Wei 2000; Globerman and Shapiro 2003), though not always (Oneal 1994; Li and Resnick 2003). Explain which countries become more important with logged FDI.

Answer:

Logging compresses large values and expands low values (i.e., values near zero). So when using logged values the model is trying to explain more the variation in low levels of FDI than high levels.

203. Often the issue of dichotomous versus continuous lies hidden in conceptual discussions. Vu's discussion of the analysis of the state makes a distinction between "variables" and "attributes." How does the issue of dichotomous dimensions seem to lie in the distinction between the two?

Weber defines it [the state] as "a human community that (successfully) claims the *monopoly of the legitimate use of physical force within a given territory*." Later students of the state have modified this definition somewhat but the essential elements remain the same. Tilly defines states as "coercion-wielding organizations that are distinct from households and kinship groups and exercise clear priority in some respects over all other organizations within substantial territories." For this definition he means to include city-states, empires, and theocracies and to exclude tribes, lineages, firms, and churches. "national states" are a subset of states that are relatively powerful, centralized, and differentiated sovereign organizations. Levi offers a more restrictive definition than Tilly: "a state is a complex apparatus of centralized and institutionalized power that concentrates violence, establishes property rights, and regulates society within a given territory while being formally recognized as a state by international forums." These later definitions avoid such terms as "monopoly" and "legitimate," perhaps because these are seen as variables, not attributes. (Vu 2010,164-65; Levi 1982, 40 makes the same distinction between "variables" and "elements of a definition.")

Answer:

"Variables" are continuous dimensions, while Vu seems to assume that "attributes" are dichotomous. One could certainly think that all the attributes of a state discussed in this quote are continuous.

204. Collier et al. 2008 use the following example of a typology (table 7.2). Critical in thinking about typologies is the scale type of the the row and column variables. This table clearly has ordinal variables. How would you change the format to reflect better the ordinal nature of the scale to make it similar to the familiar Cartesian coordinate system?

Answer:

To make the ordinal nature clearer and to make it similar to the Cartesian system, one should flip "high" and "low" on the Y-axis (ambiguity variable) so that low is near the origin.

205. "The main difference between our approach and the alternatives is that we use a nominal classification rather than a ratio scale. . . . The analogy with the proverbial pregnancy is thus that whereas democracy can be more or less advanced one cannot be half democratic. There is a natural zero point (Przeworski et al. 2001,

57). " Do other democracy measures, e.g., polity or Freedom House, assume or imply a ratio scale?

Answer:

There is very little explicit discussion of scale types in measurement articles or dataset articles. One can easily make the case that most measures assume interval but that very few assume ratio (those expressed in money would be one category). For example, all latent variable models are interval and not ratio, because the scale is arbitrary.

206. *The Bell Curve* (Herrnstein and Murray 1994) was a very controversial book. It turns out that the data on "intelligence" used were in fact not bell-shaped, but skewed to the right (i.e., quite a few very high scores). This skewness was "fixed" so that the data actually analyzed were bell-shaped. Discuss how this will influence their statistical results particularly given that they want to show that intelligence is a cause of outcomes such as income. It is important to note that it is completely standard procedure to assume a normal distribution in standardizing IQ data, for example, to make them comparative across nations or time.

Answer:

See Fischer et al. (1996) chapter 2 for a discussion. By "correcting" for skewness they stretch out the scores at the high end thus getting "better" statistical results because these values now have a greater impact. This is the same logic as logging to improve fit.

207. Logging variables means that some variation in the data become much more important than other. When using raw FDI inflows instead of as a percentage of GDP, FDI is usually logged (Chan and Mason 1992; Wei 2000; Globerman and Shapiro 2003), though not always (Oneal 1994; Li and Resnick 2003). Explain which countries become more important with logged FDI.

Answer:

Logging compresses large values and expands low values (i.e., values near zero). So when using logged values the model is trying to explain more the variation in low levels of FDI than high levels.

208. *Social science concepts* takes a realist view of concepts that emphasizes what the theorist *means* by the concept. Many scholars will log variables because of skewness and many see skewness as a problem. Explain why a realist and one concerned by the meaning of concepts would object to Fearon's comments:

Still, as an index of overall ethnic diversity F [$F = 1 - \sum_{i=1}^n p_i^2$ where p_i are the population shares of each ethnic group] has much to recommend it. . . . And its empirical distribution—summarized in Figure 2—is not highly skewed. (footnote: Cox (1997) and others sometimes prefer to use the "effective number of ethnic groups" (or political parties' vote or seat shares), which is $1 = (1 - F)$. Thus, a country with n equal-sized groups has an "effective number" of n groups, with departures from equal shares shrinking the effective number continuously. Although the interpretation is "nice," this measure is highly skewed, at least for ethnic fractionalization, so that it tends to exaggerate the influence of very diverse countries like Tanzania when used as an explanatory variable). (Fearon 2003, 209)

Answer:

She would answer that the methodological cart is driving the conceptual and theoretical horse. It may be that the scores for a concept are skewed in the real world. To log the data or prefer a measure that gives a bell-shaped curve would distort the meaning of the concept and what is the real state of affairs in the world.

209. Scholars often do not pay much attention to the difference between interval and ratio variables. Often methodologists and philosophers say that the higher the scale type the better, i.e., ratio is better than interval. This can conflict with the desire to log variables because of skewness. Using foreign direct investment data describe how scholars can implicitly convert ratio data into interval data.

Answer:

Raw foreign direct investment (FDI) data (e.g., in constant US dollars) can be positive or negative, hence there is a true zero which is meaningful and hence we have ratio data. Since one cannot take the log of negative numbers these must be converted into all positive numbers and thus the true zero in effect disappears making the data interval level.

210. A problem with zero codings is that it might seem like a real zero, but in fact is used for other purposes. Vreeland discusses in detail the anocracy coding of countries using the polity data: "PARCOMP [one of the five parts of the polity measure] ranges from repressed to competitive (numerically, from -2 to 3). What does the middle capture? PARCOMP is coded 0 for "not applicable situations, or, more specifically, the coding "is used for polities that are coded as Unregulated, or moving to/from that position (Gurr 1989, 14)" (2008, 406). Discuss the different things that zero means for PARCOMP.

Answer:

The PARCOMP scale goes from -2 to 3, this suggests that zero is a middle ground. In fact, it is also used to code "not applicable" which is certainly not in that middle ground.

211. Homogeneity of the zero cases when the dependent variable is coded dichotomously is often very problematic because they include quite different outcomes all coded as zero. Kroenig (2009) is looking nuclear states supplying sensitive technology to non-nuclear states. It is quite likely that different causal mechanisms are producing these different zero outcomes. The dependent variable is received sensitive nuclear assistance or not. Discuss how the "not" case may contain two (or perhaps more) quite different kinds of zero.

Answer:

The zero cases include those countries who never tried to get such technology and those states who requested it but were turned down. See Kroenig's Appendix C "Selected cases of nonassistance" for some examples, such as "Argentina to Iran (1992). Argentina denied an Iranian request for hot cells (Hibbs 1992)."

212. A very common problem is confounding "not applicable," "missing," and "zero," by using the same codes, often zero. Discuss some common examples of this such as: (1) trade where very small levels of trade might be missing, might be

zero (e.g., Oneal and Russett (1999) assume missing data to be 0 in the trade relationship; see also Gleditsch 2002); (2) COW militarized dispute data on fatalities, if you can find no reports on fatalities, should you code that as missing or zero. See also exercises 210, 164, 167, and 218 below.

213. Sometimes the use of zero becomes a critical cut point. Bennett argues for a continuous specification of the democracy–autocracy continuum. He says that “In the specification advanced below, I avoid arbitrary cutoffs for democracy and autocracy” (2006, 320). Then he does the following “The first interactive similarity [of regime type] variable is constructed by multiplying the initiator’s dem [polity democracy score] score by the target’s dem score. Given dem scores ranging from -10 to +10, this multiplicative similarity variable will be high (large and positive, to a maximum of +100) for jointly autocratic and jointly democratic pairs. Similarity will be in a middle range, around 0, for pairs of mixed regimes (a dem score for either state near 0 produces a joint similarity score near 0). Similarity takes on its lowest values (to a minimum of -100) for pairs of dissimilar states (with a +10 and -10 dem score combination). If it is similar regimes that do not fight rather than jointly democratic pairs, then this variable will have a negative effect on conflict while other variables do not” (2006, 321). How might be argued to have used an arbitrary cut point with the zero?

Answer:

The construction of the interaction terms assumes that the polity measure is ratio. It could be argued that using the polity zero is arbitrary, particularly since the dichotomous coding of democracy for polity uses 6 or 7. One would need to make the argument, particularly in a fuzzy logic perspective, that zero is really the half-in, half-out point on the polity scale.

214. Describe two statistical models where the difference between interval and ratio scales can mean making errors in the interpretation of statistical results.

(1) Interaction terms. (2) Log-linear models such as gravity models of trade: parameter estimates are unbiased only under linear transformations.

215. Researchers often take the log of a variable for “data reasons,” e.g., skewed data. What are *theoretical* reasons for taking the log? What would be the opposite of taking the log? What theoretical reasons might incite you to do the opposite of the log?

Answer:

A common theoretical reason for taking the log is one of diminishing marginal effects. One might have increasing returns over part of the range of the variable as part of an S-curve scale (or calibration to use Ragin’s term), see Ragin 2008 for a nice example of this.

216. One issue in dealing with concepts deals with kinds of scales, ordinal, nominal, interval, and ratio. Is the polity measure of democracy interval or ratio? If it is ratio what is the zero point?

One could argue that -10 is the zero point, completely nondemocratic, like absolute zero.

It seems plausible that the polity *concept* of democracy does have a possible zero point (i.e., completely nondemocratic). However, most people treat the measure as interval when changing the scale by adding 10 (which is standard practice). The Alvarez et al. remark deals with *where* the zero point should be if it were a ratio scale. Implicitly the polity scale would put it at -10. Alvarez et al. would place the zero in the middle dividing democracy from autocracy.

217. Are there situations where you really need ratio rather than interval data? For example, in conflict studies where one wants to distinguish between friends and enemies.

218. The left-right scale (“rile”) of the Party Manifesto Dataset (Budge et al. 2001, Klingemann et al. 2006) is one of the most widely used measures in comparative politics. The rile scale is used to situate parties on the left-right continuum based on party manifestos. To do this, statements in the party manifesto are categorized according to 56 possible issue categories. The data report the percentage of all statements comprised by each category. If a category is not mentioned, the dataset reports that 0% of the statements is concerned with that category. A party’s position is derived by adding the percentages of 13 categories seen as being left and subtracting the percentages of 13 categories seen as being right.

Analyze how zero has two different uses in the coding and measurement of policy positions. Explain how this produces problems in the final measure. In particular discuss how aggregating the zeros on the different 26 policy positions becomes zero in the final left-to-right policy scale.

Answer:

Zero is used to indicate missing data. That is when one of the 56 issues categories is not present in the party manifesto it is given a value of zero. Zero also means the middle of the -100 to +100 scale. These are two fundamentally different things. See Rehm (2008) for an extensive discussion of this and other conceptual and measurement problems.

219. Zero points on scales have important roles. For example, in interpreting Cox regression model the impact of independent variables is often assessed vis-à-vis a “baseline” model where the independent variables have value zero. Discuss how this matters using the democracy and other key variables, such as level of development, in the Hegre et al. (2001) analysis of the “democratic civil peace.”

220. Londregan and Poole (1996) transform the polity scale of -10 to 10 to $-\infty$ to ∞ . They justify this because

The 21-point GOVTYPE [i.e., polity] scale is nearly continuous. However, because it has a “floor” of -10, and a “ceiling” of 10, we need to be careful not to use a statistical mode that predicts values outside this range. A standard way to ensure this does not happen is to apply a logistic transform to the variable. Let S denote a score on the 21-point scale. Take the following variant of the logit transform of S : $T(S)=\ln(S+10.5)-\ln(10.5-S)$. This converts scores to a truly continuous scale. A value of S at 10.5 would correspond to a $T(S)$ of ∞ , an S of -10.5 to a $T(S)$ at $-\infty$, while a value for $T(S)$ of 3.71 corresponds to a regime type of 10. (Londregan and Poole 1996, 7)

Consider the following questions: (1) does the fact that polity stops at 10 really mean that a country cannot be more democratic? See exercise 234 that suggests that democracy can extend beyond 10. (2) The transformation used implicitly suggests that the main shift from authoritarian to democracy occurs at zero on the -10 to 10 scale. Is this appropriate? When does polity code the transition to democracy? (3) What the curve look like in the T(S) function? Does that correspond to a good concept of democracy? See Ragin 2008 for a very different view of calibration than Londregan and Poole.

Answer:

Exercise 234 suggests that the concept of democracy should extend beyond 10 of the polity scale. Hence, there is perhaps no imperative reason to do the transformation in first place; that model predicts values greater than 10 is not problem since the polity concept extends beyond 10.

The transformation means that the model is predicting increasing marginal effects around zero, which may not be justified. It seems like the transition to democracy really occurs more toward 6 on the polity scale, and that is the official point where scholars dichotomize the polity measure. The Londregan and Poole transformation assumes a strongly decreasing marginal relationship between around 6-7, where in reality this might be where it is strongly increasing.

221. An important aspect of all measure construction is standardization. Often this is done based on population, such as GNP/capita. Time is another common standardizing device, e.g., actions/year. Discuss the advantages and disadvantages of using time or the log of time to evaluate the extent of violations of the laws of war in Morrow and Jo (2006, figure 3). One might feel that to compare the number of violations one needs to take into account the length of the war.

Answer:

For the purposes of statistical fit often the log is taken because the data are skewed. Morrow and Jo do not say why they took the log.

222. A very standard problem in measure creation is to combine the data on two or more secondary-level dimensions. Often this involves dimensions that have different scales and then some way of structuring them together mathematically. For example:

we devise a new way to use the information of civil war duration and deaths for the two-stage regression analysis. The duration and casualties of civil wars are correlated, and it is theoretically inappropriate to estimate equation (2) for only one of them. Therefore, we combine the two characteristics of civil war into one, Civil War Destructiveness Index, by adding their standardized values. Before standardization, civil war duration is measured by the maximum duration in number of days of the war. Civil war deaths are measured by the total number of deaths experienced by the nation, divided by population. (Kang and Meernik 2005, 101)

Discuss (1) the importance of differences in variances between the two component parts in constructing the overall measure, (2) whether skewness in the data matter (often social science data are often heavily skewed), (3) the alternatives to standardizing the two scale, and (4) whether one should multiply or add the component parts.

223. Issues of scale type -interval versus ratio -are typically ignored most statistical analyses. For example, as Braumoeller (2004) and Brambor et al. (2006) nicely show, this has major implications for the use of interaction terms. Also very common is the logging of variables. Other exercises deal with whether Signorino and Ritter's S measure of foreign policy similarity is interval or ratio. However, if this variable is to be used in gravity models of trade a problem arises: one cannot take the log of zero or negative numbers. The basic gravity model plus S is $Y = GNP^{\beta_1} * Distance^{\beta_2} * S^{\beta_3} * \epsilon$. The actual statistical estimation is based on $\log(Y) = \beta_1 * \log(GNP) + \beta_2 * \log(Distance) + \beta_3 * \log(S) + \log(\epsilon)$. What should one do in this case with the S variable? See Long (2003) who rescales from [-1,1] to [1,3]. Is this valid? Is the symmetry around zero important for the S measure and does that influence logging decisions? What if he rescaled to 1-100?

A similar issue arises in gravity models when the additional variables are dummy variables. For example, an extensive literature looks at the impact of regional or preferential trading agreements: " $\log PTA_{it(t-1)}$ is a dummy variable that equals one if i and j are party to a common preferential trading arrangement in year $t - 1$, zero otherwise.... It should be noted that in antilogarithmic form, all the dummy variables in equation 2 take on values of e (the base of the natural logarithms) and one; as such, the logarithms of these variables take on values of one and zero." (Mansfield and Bronson 1997, 99). When Mansfield and Bronson evaluate the substantive impact of these dummy variables they do not use the logged version of the gravity model (which they used for the statistical analyses), but the exponential version of the gravity model. In the standard regression model the dummy variables can take on any two values, is the same going to be true when moving back and forth between the log and the exponential models? Try using different values for the dummy variables in the logged equation and see what happens. Also, are the statistical estimates of the β 's correct in the antilog equation?

See Beck and Jackman (1998) for how differences in logging can influence results and alternatives to logging.

Answer:

Most statistical estimates are valid under linear transformation of the X variables, but not under nonlinear transformations. Hence moving back and forth between exponential and logged values does not preserve statistical properties.

224. Often scholars pay no attention to the distinction between interval and ratio variables. Much of international conflict work implicitly works with ratio variables because of the contrast of, for example, between friends and enemies or satisfied and dissatisfied states. Often this means scales where -1 is enemy and 1 is friend, and where 0 is the dividing line. For interval measures there is no real zero. One can always rescale interval measures so that they do include zero, but that does not make the measure a ratio one. Discuss whether the widely used S measure (Signorino and Ritter 1999) is interval or ratio. The footnote on page 218 of the concept book says S is ratio, but I am no longer convinced of this.

Answer:

The original scale of the S measure is [0,1]. This is then transformed to [-1,1] in the data used in applications. The zero in [-1,1] does not appear to be the zero needed to distinguish between, say, friends and enemies. Also, the data are very skewed towards 1: the median is often in .75 range, hence there are very few negative values in most situations. See Goertz (2008) for an extended discussion. To make S ratio would require some theoretical and methodological argument for determining the zero point.

225. One issue not much discussed in the book is the distinction between various kinds of scales, ordinal, nominal, interval, and ratio. This is related to the issue of dichotomous versus continuous concepts and measures. What is the error in the following quote in this context? Use the polity measure of democracy in your answer.

[W]hile some regimes are more democratic than others, unless offices are contested, they should not be considered democratic. The analogy with the proverbial pregnancy is thus that while democracy can be more or less advanced, one cannot be half-democratic: there is a natural zero-point. (Alvarez et al. 1996, 21)

Answer:

Whether a concept or measure has a zero point is an independent issue. There are two questions. (1) Does the concept/measure have a zero point? (2) If so where is the zero point? It is an open question whether many concepts or measures of democracy are interval (i.e., no zero point) or ratio (there is a zero point). See Collier and Adcock (1999) for a good discussion of the issues involved in dichotomous versus continuous concepts and measures.

It seems plausible that the polity *concept* of democracy does have a possible zero point (i.e., completely nondemocratic). However, most people treat the measure as interval when changing the scale by adding 10 (which is standard practice). The Alvarez et al. remark deals with *where* the zero point should be if it were a ratio scale. Implicitly the polity scale would put it at -10. Alvarez et al. would place the zero in the middle dividing democracy from autocracy.

226. Moravcsik (2002) provides an interesting use of concepts+/-adjectives. He uses the terms “democratic deficits,” “democratically legitimate,” and “democratic governance.” Are these all synonyms? Discuss how democracy functions as an adjective.
227. Following the work of Esping-Andersen, much of the work on the welfare state deals with the “commodification” of work. Here one needs to think about the negation: why use de-commodification instead of, for example, noncommodification. Also, the name of the concept implies a process instead of a state, does this matter? For a review see Knijn and Ostner (2002).
228. There topic of concepts+/-adjectives arises with great force in thinking about the EU as a state. Scholars talk about Westphalian, regulatory, post-modern, regional, international, e.g., (Caporaso 1996). Others talk, for example, about “multi-level governance” (e.g., Hooghe and Marks 2003). Analyze these various concepts in terms of their coverage of cases the degree to which they are subsets

of a Weberian concept of a state. International relations scholars categorize the EU an international organization (Pevehouse et al. 2002). How does this relate to conceptualizations of the EU in terms of states? Should one think of the EU in terms of a gray zone? Discuss how the conceptualization of the EU as a state influences your view of the “stateness” of the members. For example, if the EU is a state does that mean that countries like France lose their status as states?

Answer:

One potential solution is to consider the EU and its members as “quasi-states.” Basically, in some areas such as trade the EU acts like a sovereign state. In other areas the members retain sovereign control. Hence both the EU and its members are in the gray zone.

229. There is a very large literature in American politics on the concept and measurement of racism, and it is a topic that arouses much controversy: “Is white opposition to policies driven by racial prejudice or is it grounded in race-blind ideological principles?” (Feldman and Huddy 2005, 168; this is first sentence of the article). There are many aspects of this debate of interest regarding concepts. (1) One interesting aspect is the variety of terminology, such as “overt prejudice,” “new racism,” “racial resentment,” “old-fashioned racism,” and “symbolic racism.” In addition there are related concepts such as “prejudice” and “discrimination.” In particular the use of adjectives is of interest: discuss the issues and implications of the use of the concept “symbolic racism” (e.g., Tarman and Sears 2005) as a particular use of concepts+adjectives. Notice as well the relevance of the negation guideline given in the use of adjectives. (2) The negation guideline suggests that much can be gained by focusing on the opposite concept. Much of the debate revolves around the the concept of a “principled conservatism” which argues against policies such as affirmative action but which is not racist (Sniderman et al. 1996). One focus on that concept instead of directly on racism. For example, if one is *principled* then those principles should apply across groups by gender and sexual orientation and not just race. (3) It is important to think about causal relationships in concepts. One might suggest that, at least in the case of the south, principled conservatism is a consequence of racism, given that race was a central component of Southern culture and politics for centuries. See Quillian (2006) for a nice survey of the political science, sociology, and psychology literatures.
230. Sometimes scholars use a wide array of adjectives to describe what appears to be the same concept. For example, “negative peace” (Boulding 1978), “precarious peace,” (George 2000), “adversarial peace,” (Bengtsson 2000), or “pre-peace” (Bayer 2005), “conditional peace” (George 2000), or “cold peace,” (Miller 2001) all seem to refer to the same phenomenon. Discuss if this is in fact the case. Is one adjective to be preferred to the others. Are there some adjectives that are not good?
231. For some important concepts like “democracy” and “peace” scholars have attached the adjective “stable.” In early work (e.g., 1960s) this was common for democracy, but the “stable” adjective was dropped until people began to work on democratic transitions. In contrast, it is still very commonly used to denote a

high level of peace (e.g., Kacowicz and Bar-Siman-Tov 2000). What is a potential problem with using stable as an adjective?

Answer:

In the early literature on democracy and the literature on peace, often stable often means “high level.” For many “stable peace” and “positive peace” mean the same thing. It useful to distinguish between the level of a variable and how stable the phenomenon is at any given level. This is not a problem in the literature on democratic transitions since the emphasis is really on stability. See Klein et al. (2006) for a survey of the literature on the concept of peace.

232. Terrorism is a big policy as well as scientific issue. There are a large variety of different adjectives attached to the concept “terrorism” including international, transnational, state-sponsored, state, domestic, political, revolutionary. In making sense of this one must consider how the adjective is modifying the terrorism concept. Related to this is that many of the adjectives involve the negative pole of a dichotomous concept, e.g., state versus nonstate. Analyze the conceptual issues involved in defining terrorism, with or without adjectives. Discuss how the decisions one makes can have a significant impact on case selection.

Answer:

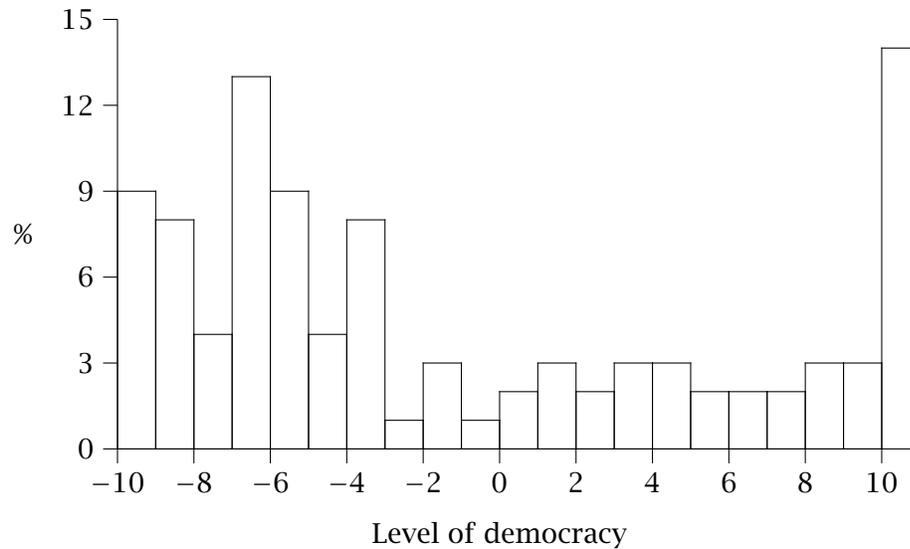
Obviously this is a huge set of issues. For a survey of different concepts of terrorism see for example Crenshaw (1972), Gibbs (1989), Held (2003).

233. Sometimes the ideal point is not at the end of the scale but in the middle somewhere. Analyze the concept of “judicial (in)dependence” as an example of this. See Larkins (1996) for a review of the literature.

Answer:

Typically, one wants the courts to be not completely unresponsive to elected officials. At the same time the courts cannot be completely submissive to these officials. Hence the ideal point is some degree of independence whereby often judges can be removed and appointed by elected officials. Also, there are typically legislative mechanisms for overriding some judicial decisions.

234. The opposite of an ideal type in terms of extension is a concept/measure with a lot empirical cases located at one extreme. The polity dataset has exactly that characteristic (see the histogram below, discussed in more detail in Goertz 2008). This suggests perhaps that the maximum coded is not in fact the maximum, positive pole for democracy. Recent work on the “quality of democracy” suggests that there might be additional dimensions one could add. What might some of these be? One might think of having a necessary condition core to the concept of democracy but then have additional family resemblance factors that increase the quality of the democracy.



Answer:

The following is what a number of researchers have done to add dimensions to the democracy concept that might deal with this question, note the structure described in the quote:

The five essays that follow are part of a collaborative effort, launched at a conference at Stanford University, to elaborate and refine the concept of democratic quality and to apply it to a series of six paired country comparisons. We asked each author to discuss a particular dimension of the quality of democracy such as freedom, the rule of law, vertical accountability, responsiveness, and equality (our own list, and by no means exhaustive). We wanted each author to explain how the dimension in question relates to other dimensions in our framework, to suggest possible indicators for measuring the dimension, to identify ways in which this element of democratic quality is subverted in the real world, and to offer (where possible) policy recommendations. Our full framework features eight dimensions: the five outlined above, plus participation, competition, and horizontal accountability. Other dimensions might include transparency and the effectiveness of representation. The different aspects of democratic quality overlap, however, and we choose to treat these latter two as elements of our principal dimensions. We attempt here to identify some of the ways in which the different elements of democracy not only overlap, but also depend upon one another, forming a system in which improvement along one dimension (such as participation) can have beneficial effects along others (such as equality and accountability). At the same time, however, there can be trade-offs between the different dimensions of democratic quality, and it is impossible to maximize all of them at once. In this sense at least, every democratic country must make an inherently value-laden choice about what kind of democracy it wishes to be. Talk of a “good” or “better” democracy implies knowing what democracy is. At a minimum, democracy requires: 1) universal, adult suffrage; 2) recurring, free, competitive, and fair elections; 3) more than one serious political party; and 4) alternative sources of information. If elections are to be truly meaningful, free, and fair, there must be some degree of civil and political freedom beyond the electoral arena so that citizens can articulate and organize around their political beliefs and interests. Once a country meets these basic standards, further empirical analysis can ask how well it

achieves the three main goals of an ideal democracy—political and civil freedom, popular sovereignty (control over public policies and the officials who make them), and political equality (in these rights and powers)—as well as broader standards of good governance (such as transparency, legality, and responsible rule). (Diamond and Morlino 2004, 20-21)

235. Analyze the concept of “transitional justice” from the point of view of concepts+/-adjectives (Teital 2000; Vinjamuri and Snyder 2004). Should one think of this concept as concepts+/-adjectives or as a basic level concept in its own right? What are the secondary-level dimensions? Data/indicator level? For one complete three-level structure see Ussery (2010).

Answer:

The concept of justice is so complicated and involved that one might want to immediately limit the range of discussion to “transitional justice” as a basic-level variable in its own right. This would simplify discussion and allow one to stick to the specific literature on the topic and avoid the immense literature on justice.

236. One can think of the negative pole as something with a separate set of dimensions than the positive pole. For example, Geddes (1999) defines three types of dictatorships as personalist, military, single party, or amalgams of the pure types. Alvarez et al. (1996, 16-19) have three dimensions of “dictatorship” whether it is mobilizing or exclusionary, how many formal centers of power it has (executive, legislative, and parties), and whether it rules within a framework of law or in some more arbitrary manner. How could you consider these as a concepts+/-adjectives, with democracy as the positive pole concept?

Answer:

Basically one can consider these as analogous to “parliamentary democracy.” The absence of the secondary-level dimensions of democracy defines an autocracy and then one adds adjectives such as “military,” “single party,” etc. See Collier and Adcock (1999) for a discussion of this general issue.

237. How does Sartori view the question of sufficiency in the ontological view of basic-level variables? See also Collier and Levitsky (1997) for the same question.

Answer:

He focuses his attention on the minimal necessary conditions and does not explicitly make claims about sufficiency. In one footnote he explicitly rejects sufficiency ideas. Collier and Levitsky make no claims about sufficiency and focus only on the minimum requirements for democracy.

238. Contrast Bollen’s view of democracy with Collier and Levitsky’s (1997). Does Bollen use a necessary and sufficient condition or family resemblance to democracy? Collier and Levitsky?

239. Frequently ideal types involve a long list of characteristics. Why does that naturally lead to the use of family resemblance *m-of-n* procedures when constructing measures? Fearon (2003) might be an example.

Answer:

It is very unlikely that any given object will actually have all the characteristics listed as part of the ideal type. Hence, it is natural that one only requires a certain minimum number. One can perhaps generalize that when long lists of characteristics are given that family resemblance structures will be used, but that when the number is small, necessary and sufficient condition structures are more likely.

240. In the example showing that extension can increase with extension with family resemblance concepts, the book used a constant “half or more” rule. In practice, it seems to be case that as the total number of possible characteristics increases that the threshold does as well. For example, one might use 2 out of 4, but when the total is 10 the rule might be 7 out of 10. Discuss the validity of this tendency. What are the implications in terms of extension?

Answer:

It seems like there is some intuition that when the total number of characteristics increases that extension is likely to increase (as demonstrated in the text). To keep the extension in line, the threshold is thus increased.

241. Analyze using the concept+/-adjective discussion, what is referred to by “women’s (social) movement”? (See Mazur and Stetson 2003 for one discussion)
242. Collier and Levitsky (1997) develop the concept of diminished subtypes. Does the use of a diminished subtype have a predictable affect on the extension of the conflict? Does it depend on the structure of the concept from which the subtype is constructed?

243. The example in the text shows that the extension can go up with intension (i.e., adding secondary-level dimensions) for the family resemblance structure. Can it go down? If so construct an example where this happens. If it cannot go down explain why.

Answer:

To do this create an example where the new dimension is very rare empirically.

244. If the extension of a family resemblance concept can go either up or down with intension (see the previous question) then can you provide a general rule from when each direction (i.e., up or down) is likely to happen?

Answer:

If the added dimension is empirically very common then extension is likely to go up. If the added dimension is empirically rare then extension is likely to go down.

245. One part of the conventional wisdom is that measures of democracy are highly correlated. It may be the case that this high correlation masks significant disagreement, particularly in the gray zone. Bogaards finds big potential differences between concepts and measures of democracy for African cases. Contrast Bogaards’s (2007) examination of African data with Treier and Jackman’s (2008) discussion of errors in measurement. Where do each see the biggest problem of measurement error?

Answer:

Bogaards almost by definition looks at only gray zone cases, i.e., elections in Africa. His analysis suggests that there can be major differences between democracy measures. In contrast, Treier and Jackman argue that there is most uncertainty at the ends of the authoritarian–democracy scale; measurements are most accurate in the middle (i.e., the gray zone). Bogaards analyses imply that uncertainty and error are more likely in the middle.

246. A key practice in the use of the polity measure of democracy is dichotomizing. This is typically done based on convention (e.g., democracy when the polity score is greater than 6). Assuming the necessary condition view of democracy do an empirical analysis of the five polity dimensions. Are any of them empirically necessary or sufficient? Could you propose a more empirically valid dichotomous measure? Ignore that there may be a small percentage of exceptions to the necessary and sufficient condition structure in your model. Would a family resemblance structure be better? A hybrid? See Bueno de Mesquita et al. (2005) for some very helpful hints.

Answer:

Bueno de Mesquita et al. (2005) provides a good starting point. “For instance, only 26 percent of the times when countries have open executive recruitment have they also institutionalized multiparty competition. But, if they have multiparty competition, then 97 percent of the time they also have open executive recruitment. Open recruitment appears to be necessary but not sufficient for multiparty competition.... Just consider that in the absence of openness of recruitment, executive constraints, and executive competition, there are only 66 cases of multiparty competition (PARCOMP 1), compared with 2,016 such cases when those other dimensions are maximized. Yet, there are 4,089 instances of open executive recruitment without maximal executive constraints, executive competition, and multi-party competition. Clearly, it is very hard to have multiparty competition without the other dimensions, but it is not difficult to achieve thresholds on other dimensions without having multiparty competition.” (pp. 453–55)

247. A key assumption in multidimensional concepts is that the various means of achieving a given aggregate level are equivalent (e.g., 2+3 and 4+1 are really the same). There are several key questions that need to be answered. (1) what are the criteria for deciding equivalence? (2) how can you separate the individual secondary-level dimensions from the method of aggregation? Take the polity data and examine the extent to which this is the case. Bueno de Mesquita et al. (2005) provides a very good discussion of these issues.

Answer:

One common criterion for equivalence is similar causal effect in some key hypotheses. Another common criterion is the intercorrelation between the secondary-level dimensions. Bueno de Mesquita et al. (2005) illustrates the use of these two.

248. One form on concept-measure inconsistency not really discussed in the book is that between a secondary level dimension and its indicators. Examine the

concepts and measures for democracy in table 4.2. Which secondary-level dimension is most likely to be affected by gender considerations? Which kinds of concept structures will be most affected by the inclusion of gender concerns? Which actual concept/measure in table 4.2 would you expect to shift the most?

Answer:

Almost all concepts of the democracy have “participation/voting” as a secondary-level dimension. Almost universally, the concept involves principles like participation in general, but at the indicator level it is almost always *white male* participation. Paxton (2000) discusses extensively the mismatch between concept and measure:

Although there remains some debate about the definition of democracy, most scholars would agree that a democracy has at least three components: competition, participation, and civil liberties. I focus on the second component of democracy - participation - which is the source of the operational mismatch in current research. Participation is central to most definitions of democracy. For example, Diamond, Linz, and Lipset (1990:6-7) explain: “democracy ... denotes ... a highly inclusive’ level of political participation in the selection of leaders and policies, at least through regular and fair elections, such that no major (adult) social group is excluded. Modern theoretical definitions of democracy stress numbers of people rather than “types” of people. Most authors today consider the criterion for democratic inclusion to be “all native-born adults” (Paxton 2000, 93-94).

In particular, measures that use substitutability will change less than when making gender corrections than other concept structures. In addition, dichotomous measures will be more susceptible to dramatic changes. In summary, a necessary and sufficient condition structure with dichotomous indicators is likely to shift the most. See Paxton (2000) for a good discussion on the dichotomous versus continuous issue.

249. Discuss the issue (Munck and Verkuilen 2002) of redundancy among indicators for the polity concept and measure of democracy. Is there redundancy between the five indicators? Is that good or bad? What is the redundancy argument used for the civil liberties secondary-level dimension? (See the chapter 2 questions for a related one on redundancy.)

Answer:

Redundancy is bad because the structure used is the sum. Whether there is redundancy is both a theoretical and empirical question. This is open for discussion. Jagers and Gurr argue that the lack of data on civil liberties is not a problem because these data are/would be highly correlated with the existing dimensions, i.e., civil liberties would be redundant.

250. The World Bank has developed its own database of “Political Institutions” (Beck et al. 2001). This database of 108 variables includes an index/scale similar to those in concepts and measures of democracy:

The database also contains two indexes that characterize the competitiveness of elections in countries, one for executive elections and one for legislative elections. The core of the two indexes is the number of parties that

could and did compete in the last election. Building on work by Ferree and Singh (1999), we scale countries as follows:

1. No executive/legislature
2. Unelected executive/legislature
3. Elected, one candidate
4. One party, multiple candidates
5. Multiple parties are legal, but only one won seats (because other parties did not exist, compete, or win seats)
6. Multiple parties competed and won seats (but one party won 75 percent or more of the seats)
7. The largest party received less than 75 percent of the seats. (Beck et al. 2001, 166-67)

Examine what the gray zone would be in this index. Also it would not be surprising to see researchers treating this scale as interval in a quantitative analysis. Is the distance between each level the same? Would some democracy concepts and/or measures code some of the these levels as the same (i.e., the scale is not even ordinal)?

Answer:

It seems like only levels 6 and 7 represent some form of democracy. One could argue that the gray zone is probably levels 5 and 6, with 5 being dubious. Many concepts of democracy would probably code levels 1-4 as equivalently non-democratic.

251. Examine Vanhanen's dichotomous index of democracy and its component parts for substitutability effects. As discussed in chapter 4, the use of multiplication allows for some substitutability. Find cases where this happens in the data and evaluate alternatives for dichotomy coding democracy using (1) just the necessary conditions Competition and Participation, (2) just ID [Index of Democracy], compared with Vanhanen's use of (3) Competition, Participation, and ID (see Gates et al. 2006 for a reformulation of the Vanhanen measure).

The selected threshold values [for democracy] of Competition (30 percent) and Participation (10 percent) are arbitrary, but I believe that they are suitable approximations for distinguishing more or less autocratic systems from political systems that have crossed the minimum threshold of democracy. Because both dimensions of democracy are assumed to be equally important, a country must cross both threshold values if it is to be classified as a democracy. It is not enough to define a threshold value of democracy solely for the ID [Index of Democracy]. In the case of the ID, I have used 5.0 index points as the minimum threshold of democracy, which is clearly higher than the ID value 3.0 produced by the minimum threshold values of Competition and Participation. Countries that have reached all three minimum threshold values (30 percent for Competition, 10 percent for Participation, and 5.0 index points for the ID) can be regarded as democracies. It should be emphasized, however, that it is also possible to define threshold values differently, by raising or lowering them. (Vanhanen 2000, 257)

252. Birch (2012) in a book on the concept and causes of "Electoral malpractice" argues against using the weakest link, (p. 46) for combining (or aggregating) her three secondary-level dimensions because that produces less variation in data.

Explain why a focus on the concept of electoral malpractice rejects this argument.

253. Brancati (2006) presents a very interesting argument for using the maximum. It combines case selection with the use of the maximum as an aggregation technique. What is the error she makes about the maximum as an integration technique?

The analysis presented in this article is an ordered logit analysis since the dependent variables in this study are categories of conflict and rebellion ordered from low to high forms of conflict and rebellion. This type of analysis does not assume that the categories of intercommunal conflict and antiregime rebellion are equally spaced, although it does assume that the effects of the explanatory variables are the same for all categories of the dependent variables. For this analysis, I aggregate the group level data to the national level using the maximum level of antiregime rebellion among “at-risk” groups in a country per year, and the maximum level of intercommunal conflict among “at-risk” groups in a country per year as my dependent variables.

I aggregate the data to the national level using the maximum value of conflict or rebellion in a country per year because this method of aggregation overcomes group-based selection bias in the MAR data set. Since the MAR data set does not measure antiregime rebellion and intercommunal conflict for all groups in a country but only “at risk” groups, any measure that aggregates across groups, such as the median level of conflict or rebellion in a country, is biased by the absence of groups not deemed “at risk.” Using the maximum level of conflict or rebellion in a country overcomes this problem because it does not aggregate across groups. The absence of groups from this study considered not “at risk” does not bias this measure because groups that are not “at risk” have not experienced conflict or rebellion to a greater degree than that of “at-risk” groups in this study. (Brancati 2006, 673)

Answer:

As chapter 5 discusses in detail, the maximum is an aggregation technique. Using the maximum means Brancati is testing a different hypothesis than when averaging.

254. Table 5.1 contrasts “aggregation” with “relational” in the discussion of dyadic concepts. In the spirit of Chapter 2, one can ask what the negative pole of “relational” is with regard to concepts. It is certainly not “aggregation.” While one might propose “nonrelational” what would be another alternative?

Answer:

In many ways the concept of “intrinsic” can be seen as the opposite of “relational.” Following chapter 2 one can ask what the opposite of intrinsic is. The answer here is naturally “extrinsic.” These issues are of some importance to philosophers, for a review see Weatherson (2002).

255. When deciding who gets a particular good the weakest link principle, chapter 5, can be used with the need-luxury scale to make a decision. Braybrook (1987) calls this the Principle of Precedence. Explain the moral philosophy involved.

Answer:

The Principle of Precedence means that when Alan needs something that Brenda wants but does not need, then meeting Alan's need is *prima facie* morally preferable to satisfying Brenda's desire. This suggests that needs have precedence over luxuries. The weakest link principle then suggests that for any good you look at each person's need-luxury score on the good and give it to the person with the minimum (i.e., most needy).

256. Multiple necessary conditions are sometimes used in a theory to eliminate multiple ways of getting a zero on the dependent variable. Frequently the language of constraints is used, e.g., the absence of the necessary condition constrains the actor into a different path. The multiple necessary conditions thus eliminate substitutable options. Discuss how this works in Doner et al. (2005). Also, explain how the structure of their theory is very similar to Downing's (1992) on the emergence of democracy in early modern Europe?
257. Bennett (2006) and Werner (2000) uses different measures (and hence concepts) of "similarity" between two countries' regime types. Ignoring that Werner uses 5 polity indicators, compare the two similarity measures using the information in equation for the generalized mean:

$$\min(a, b) \leq (a * b)^{1/2} \leq \frac{a + b}{2} \leq \left(\frac{a^2 + b^2}{2} \right)^{1/2} \leq \max(a, b) \quad (1)$$

In general will the Bennett measure be larger or small than Werner's? What would a table or figure comparing these two measures look like?

258. Examine substitutability claims in Doyle and Sambanis's analysis (2000) of the effectiveness of UN peacekeeping.

Answer:

"All strategies should address the local sources of hostility, the local capacities for change, and the (net) specific degree of international commitment available to assist change. One can conceive of these as the three dimensions of a triangle whose area is the 'political space,' or effective capacity, for building peace. This suggests that the dimensions substitute for one another, that is, more of one substitutes for less of another; less extreme hostilities substitute for weak local capacity or minor international commitment." (Doyle and Sambanis 2000, 781; see also the statistical model of table 4, p. 791)

However, "Thus, we theorize that the PB [peacebuilding] process is captured by: PB = IC [International Capabilities]*NLC [Net Local Capacity]." (Doyle and Sambanis 2000, 782)

259. Substitutability places a key role in a couple of aspects of Gibson and Howard's (2007) analysis of the scapegoating of Jews in Russia in the 1990s. They note that Jews have not been scapegoated in the 1990s. (1) How generally would substitutability play a key role in thinking about scapegoating in general and why some plausible groups might not be targeted. (2) Use substitutability theory to suggest changes in the approach to the psychological variables, dogmatism, xenophobia, etc. used as part of the explanation of scapegoating.

Answer:

(1) It may be that there are multiple possible choices from scapegoats, i.e., they are substitutable. So, for example, failure to scapegoat Jews is because there is some substitute for them: "Finding whom to blame is not necessarily easy or even possible, but for many Russians it likely makes more sense to blame the Communists, the nomenklatura, the legacy of Communism, oligarchs, the West, etc., than to blame Jews." (2) It may be that you need only one of these psychological attitudes, e.g., dogmatism OR xenophobia OR etc. to exhibit scapegoat behavior.

260. Walter (1997, 340–41) gives "at least" three conditions that "must hold" for a third-party guarantee to be effective in ending civil wars. Are each of these necessary? Is there substitutability between them?

261. Examine Hartzell and Hoddie's (2003) concept of "power sharing." How does substitutability play a big role in this concept? Could you use the ideas of this chapter to test their claim?

Answer:

"An innovation of this study is to suggest that power sharing should instead be considered a continuous variable that ranges in value from zero to four with each increment representing an additional dimension of power sharing (political, territorial, military, and economic) specified in the rules governing the society. The greater the overall number of power-sharing dimensions specified, the more likely that peaceful relations among collectivities will endure." (Hartzell and Hoddie 2003, 321) This clearly indicates a family resemblance structure.

"A second reason that the inclusion of multiple dimensions of power sharing in a negotiated civil war settlement proves advantageous to the prospects of long-term peace is that it serves as a source of protection against the failure to implement any single power-sharing provision of the settlement." (Hartzell and Hoddie 2003, 321). This clearly indicates that substitutability is core to power-sharing.

One might test to see if any of the four measures is necessary. Also, one might look at different forms of substitutability in addition to the straight additive measure.

262. Use the ΔJG measure of democracy and redo the logit statistical analyses. Does one find the same relationship between substitutability and conflict initiation with ΔJG ? The data for conducting this exercise can be found on the book's web site.

263. Examine the theory behind the use of the weakest link for other common conflict variables in table 5.1, notably (1) major power, (2) level of development, (3) militarization, and (4) arms race. What are the hypotheses embedded in the dyadic concepts? Can you formulate them in terms of substitutability?

264. Do an empirical analysis of dyadic measures of (1) major power, (2) level of development, (3) militarization, and (4) arms race. Do the results with these variables resemble those conducted in the book with democracy and trade?

This file provides exercises for the book *Explaining war and peace: case studies and necessary condition counterfactuals*. Answers to these exercises (except those that are open-ended or intended for general discussion) may be obtained by instructors from Gary Goertz (ggoertz@u.arizona.edu) or Jack Levy (jacklevy@rci.rutgers.edu). If you would like to be informed when these exercises are updated please contact us and we will put you on the emailing list.

The goal of these exercises is to provide material for classroom discussion and homework exercises. Some of the exercises deal with problems of logic. Other exercises involve the wider literature on World War I, the end of Cold War, or more generally the literature on international security, conflict, and war. A few have a more philosophical bent. We feel it is useful to see how the debates on World War I and the end of the Cold War appear in other debates about the causes of international conflict. Also, we have included exercises that might lead to different readings or interpretations. We think these can be useful in classroom discussions. Our goal is to provide a variety of possibilities and let the instructor choose those among them that fit within the scope and purpose of the class.

Most of the articles referred to in the following exercises are available electronically via library subscription in PDF format; complete references are found at the end. If possible we have chosen an electronically available article to a book. Some of the exercises appear briefly in the book itself and are answered there, but we have included them since we think an extended analysis would be a useful exercise in a classroom setting.

We welcome comments on these exercises and suggestions for new ones. We hope to expand this database of exercises over the next few years. You can check for updated versions of the exercises at: http://www.u.arizona.edu/~ggoertz/explaining_war_and_peace.html

Within case causal inference: counterfactuals, process tracing tests, etc.

265. In the literature on within-case causal inference researchers often talk about hoop tests and smoking gun tests in terms of “certainty” and “uniqueness”: “The first dimension is called certitude or certainty and captures how likely it is to confirm a specific observable implication in process tracing. The second dimension is called uniqueness and asks whether an observable implication can be derived from a single or multiple hypotheses” (Rohlfing 2014 table 1). Rohlfing goes on to claim: “A hoop test is characterized by high certainty and no uniqueness.” (Rohlfing 2014 , 612) Describe a situation where a hoop test has a high degree of uniqueness.

Answer:

As the hoop test gets closer to being a sufficient condition, its uniqueness increases, i.e., when the hoop is very small.

266. Use the democratic peace to propose a specific counterfactual so that World War I does not occur.

267. Discuss the following claim by one of the most prominent historians today. Does it invoke a necessary or sufficient condition claim? Do a counterfactual analysis of it.

The argument that British intervention in the war was made inevitable by the violation of Belgian neutrality has been repeated by historians ever since [Lloyd George]. (Ferguson 1999a: 231)

268. Here is a much more complicated exercise in logic. The following are the core hypotheses in Schweller's article. Explain how these two hypotheses are simultaneously (1) redundant and (2) contradictory. Hint: think about contrapositives (i.e., "If X then Y" is equivalent to "If not-Y then not-X").

1. A power transition involving a declining democratic leader is both a necessary and sufficient condition for the absence of preventive war. 1a. When a declining democratic leader confronts a rising democratic challenger, accommodation results. 1b. When a declining democratic leader confronts a rising nondemocratic challenger, the leader tries to form a defensive alliance system to counterbalance the threat. 2. A power transition involving a declining nondemocratic state is a necessary but not sufficient condition for a preventive war, regardless of the regime type of the challenger. (Schweller 1992: 248-49)

Answer:

Hypothesis 1 stipulates that, given a power transition and a declining leader, (a) the leader's democracy is necessary for the absence of war and (b) the leader's democracy is sufficient for the absence of war. Hypothesis 2 stipulates that the leader's nondemocracy is necessary for war. Since there are only two kinds of leaders, democratic and nondemocratic, and since necessary and sufficient conditions are fungible via the contrapositive operation, stating that the leader's democracy is sufficient for the absence of war is logically equivalent to stating that the leader's nondemocracy is necessary for the presence of war: if $P(Y|X) = 0$, then $P(\neg Y|\neg X) = 1$. Therefore, the assertion in Hypothesis 2 that nondemocracy is necessary for war is already implied by Hypothesis 1. On the other hand, Hypothesis 2 specifically states that, given a power transition and a declining leader, the leader's nondemocracy is not sufficient for preventive war. Translating this statement into necessary-condition terms yields the statement, "The leader's democracy is not necessary for the absence of preventive war." Hypothesis 1 makes the claim that democracy is necessary for the absence of war. Hypothesis 2, therefore, merely restates one half of Hypothesis 1 and contradicts the other.

269. The confusion of necessary with sufficient conditions also arises when defining what "cause" means. Explain how this works in Wendt's analysis of cause:

In saying that 'X causes Y' we assume that: (1) X and Y exist independent of each other, (2) X precedes Y temporally, and (3) but for X, Y would not have occurred. . . . The logical empiricist model of causal explanation, usually called the deductive-nomological model or D-N model, is rooted in David Hume's seminal discussion of causality. Hume argued that when we see putative causes followed by effects, i.e., when we have met conditions (1) and (2), all we can be certain about is that they stand in relations of constant

conjunction. The actual mechanism by which *X* causes *Y* is not observable (and thus uncertain), and appeal to it is therefore epistemically illegitimate. Even if there is necessity in nature, we cannot know it. How then to satisfy the third, counterfactual condition for causality, which implies necessity? (Wendt 1999: 79)

270. Quite a few different terms are often used to distinguish between different kinds of causes, e.g., “contributory cause,” “remote cause,” “intervening/mediating cause.” Use Russett’s very interesting analysis of World War I (1962) – in particular Fay’s account – to discuss what these kinds of cause mean. See also Fischer’s classic book (1970) which talks about eight kinds of cause: (1) all antecedents, (2) regularistic antecedents, (3) controllable antecedents, (4) rational and/or motivational antecedents, (5) abnormal antecedents, (6) structural antecedents, (7) contingent-series antecedents, (8) precipitant antecedents.
271. Brooks and Wohlforth argue for a *probabilistic* interpretation of their causal claims in their reponse to Wohlforth. For the philosophically inclined, there is a major debate in philosophy about the “sense” that probably statements have for individual cases. Many argue that probability statements only make sense in over repeated events. This is called the “frequentist” position, e.g., “Our probability theory has nothing to do with questions such as: ‘is there a probability of Germany being at some time in the future involved in a war with Liberia.’ . . .probability when it refers to a single event has no meaning at all for us” (von Mises 1957: 9, 11).
272. Van Evera’s well-known article (1984) on World War I argues that the “cult of the offensive” was an important cause of the war. Find three key counterfactuals in that article that imply necessary condition hypotheses. One of the three should involve “window of opportunity” idea.
273. While the anthology focuses on necessary condition counterfactuals it is quite possible to construct a causal explanation with just sufficient conditions. Which chapter of the anthology best illustrates this? What is the sufficient condition argument?
274. What is the logical form of the hypothesis that U.S. military pressure would put such a strain on the Soviet Union “that the Soviet leadership would have little choice but to make substantial concessions on arms control” (Gaddis 1989: 13)?
275. Many historians feel that events like World War I were “over-determined.” Explain why this would generally lead them to discount necessary condition counterfactuals, e.g., “The fact that so many plausible explanations for the outbreak of the war [World War I] have been advanced over the years indicates on the one hand that it was massively overdetermined, and on the other that no effort to analyze the causal factors involved can ever fully succeed” (Schroeder 1972: 320).
- In general it is easy to make mistakes with the contrapositive that links necessary and sufficient conditions to each other.
276. Define the contrapositive: (1) starting with necessary conditions, (2) starting with sufficient conditions, (3) with multiple necessary conditions, (4) with multiple sufficient conditions.

277. The Schroeder chapter is a brilliant example of how one can use the contrapositive to make a very provocative claim. (1) Explain what he did. (2) Do the same thing with a causal claim about the end of the Cold War.
278. The following quote summarizes the argument of Sagan (1986) on the causes of World War I:

Sir Edward Grey's failure to present a clear and credible threat of British intervention early in the July crisis and the specific preemptive aspects of Germany's offensive war plans caused by the slow Russian mobilization and the Liege bottleneck are linked together as an immediate cause of the First World War. (Sagan 1986: 168; this is key thesis of whole article).

In the conclusions Sagan proposes the following counterfactual which is potentially *logically* inconsistent with the basic theory given above. What is that potential logical inconsistency? Can you give an interpretation which makes everything consistent?

If Grey had given a clear warning earlier, *if* the Czar had further delayed Russian mobilization against Austria and then Germany, and *if* the German offensive war plans had not been able to depend upon a preemptive *coup de main* against Liege and the decisive battle in France before Russian mobilization was completed in the East, *then* it is possible, just possible, that Bethmann-Hollweg would have had the time and the courage necessary to apply sufficient pressure on Vienna to accept the "Halt in Belgrade." And if this had occurred, 1914 might today appear as only another one of a series of Balkan crises that almost led to a world war. (Sagan 1986: 169).

279. A key question in the causal analysis of individual cases is the relationship between temporal distance and causal importance. Should events or factors closer to the event to be explained receive greater or less causal importance. Analyze the quote below from Gerring (2005) who argues for increasing impact as temporal distance. Does it matter whether the cause is a necessary or sufficient condition?

Consider the following path diagram. $X_1 \Rightarrow X_2 \Rightarrow X_3 \Rightarrow X_4 \Rightarrow Y$ We are apt to consider X_1 to be the cause and causal factors $X_2 - X_4$ intermediate (and less important) causes, all other things being equal. Of course, all other things are rarely equal. We are likely to lose causal power (accuracy and completeness) as we move further away from the outcome. Yet, if we did not - e.g. if the correlations in this imaginary path diagram were perfect - we would rightly grant priority to X_1 . Causes lying close to an effect are not satisfying as causes, precisely because of their proximity. Rather, we search for causes that are 'ultimate' or 'fundamental'.

Consider a quotidian example. To say that an accident was caused because A ran into B is not to say much that is useful about this event. Indeed, this sort of statement is probably better classified as descriptive, rather than explanatory. An X gains causal status as it moves back further in time from the event in question. If, to continue with this story, I claim that the accident was caused by the case of beer consumed by A earlier that evening, I have offered a cause that has greater priority and is, on this account at least, a better explanation. If I can show that the accident in question was actually a re-enactment of a childhood accident that A experienced 20 years ago, then I have offered an even more interesting explanation. Similarly, to say that the

Civil War was caused by the attack on Fort Sumter, or that the First World War was caused by the assassination of the Archduke Francis Ferdinand at Sarajevo, is to make a causal argument that is almost trivial by virtue of its lack of priority. It does not illumine very much, except perhaps the mechanism that might be at work vis-a-vis some prior cause.

The further away we can get from the outcome in question, the more satisfying (*ceteris paribus*) our explanation will be. This explains much of the excitement when social scientists find 'structural' variables that seem to impact public policy or political behavior. It is not that they offer more complete or more accurate explanations; indeed, the correlations between X and Y are apt to be much weaker. It is not that they are more relevant; indeed, they are less relevant for most policy purposes, since they are apt to be least amenable to change. Priority often imposes costs on other criterial dimensions. Yet, such explanations will be better insofar as they offer us more power, more leverage on the topic. They are non-obvious. (Gerring 2005: 174-5)

280. The following is a well-known nursery verse that describes the cause of King Richard III's fall from power. Analyze the temporal distance causal claims embedded in it.

For want of a nail the shoe was lost,
For want of a shoe the horse was lost,
For want of a horse the rider was lost,
For want of a rider the battle was lost,
For want of a battle the kingdom was lost,
And all for the want of a horseshoe nail.

Answer:

Fischer's classic book on historical explanation (1970) discusses this example as well. See quote above. See Lowe (1980) for a more technical philosophical analysis that focuses on counterfactuals and causal explanations.

281. United States law gives particular importance to the person or action that was the last one which could have potentially avoided a bad event (e.g., car accident). What does this mean about the relative causal importance of recent or distant events.

282. How can you use the powder keg model to combine the arguments of English and Brooks/Wohlforth?

Answer:

Basically the Soviet decline is the powder keg which needs the spark of new ideas and leadership. This idea is very common in the social constructivist literature, e.g., "fire [powder keg] metaphor serves for the types of interactions that we describe throughout this book. There must be an idea, advocates to spread the idea, and a public ready to receive it" (Keck and Sikkink 1998: 46).

283. A key issue in the concept of a turning point revolves around whether a turning point should be defined in terms of points in history where things changed or should also include "potential" turning points but where things did not change. For example, Herrmann and Lebow do not include potential turn points in their

definition: “We define a turning point in terms of two properties. First, it must be a change of significant magnitude, not an incremental adjustment but a substantial departure from previous practice. Second, it must be a change that would be difficult to undo” (Herrmann and Lebow 2004). Discuss the following example from A.J.P. Taylor regarding a turning point in German history where Germany did not turn:

1848 was the decisive year of German, and so of European, history: it recapitulated Germany’s past and anticipated Germany’s future. Echoes of the Holy Roman Empire merged into a prelude of the Nazi ‘New Order’; the doctrines of Rousseau and the doctrines of Marx, the shade of Luther and the shadow of Hitler, jostled each other in bewildering succession. Never has there been a revolution so inspired by a limitless faith in the power of ideas; never has a revolution so discredited the power of ideas in its result. The success of the revolution discredited conservative ideas; the failure of the revolution discredited liberal ideas. After it, nothing remained but the idea of Force, and this idea stood at the helm of Germany history from then on. For the first time since 1521, the German people stepped on to the centre of the German stage only to miss their cues once more. German history reached its turning-point and failed to turn. This was the fateful essence of 1848. (Taylor 1945: 68; for a different perspective see Blackbourn and Eley 1984)

284. Use the idea of a *window of opportunity* to define all potential turning points. What is the role of necessary versus sufficient conditions?

285. Many historians feel that the “Pleiku” analysis of World War I is basically correct (i.e., that there were many Balkan crises and that one of them would have sparked a world war). Some similar arguments have been made with regard to the impact of the Versailles Treaty on the occurrence of World War II, that is made World War II very likely. What would be one counterfactual argument that strongly contests such views? Are there parallels to the end of the Cold War debate?

Answer:

One counterfactual would stress the absolutely central role of Hitler. For example, Mueller has in several places used this idea. For example,

Thus it is simply not true that the seeds of another great war were planted at the peace conference of 1919. In order to bring about another major war it was necessary for Germany, first, to desire to expand into non-German areas, second, to be willing to risk and threaten military action in order to get these areas, and third, to be willing to pursue war when these desires were opposed by other major countries. It seems to me that none of these propositions – particularly the last two – were very popular in Hitler’s Germany, that almost no one accepted all of them, and that only Hitler, it appears, combined a fanatical acceptance of them with a maniacally determined and effective capacity to carry them out. (Mueller 1991: 22, see also Mueller 1989; Byman and Pollack 2001: 118)

286. Can you make counterfactual arguments about the role of key individual decision-makers in the World War I case? End of Cold War?

Answer:

Obviously this is a question about which historians have debated for years. We provide a couple prominent examples of scholars who have made counterfactual arguments about the role of individual leaders.

Byman and Pollack sees German and Austrian leadership in these terms, “Absent the Iron Chancellor, it is hard to imagine a defeated Austria aligning with Prussia after the humiliations of Sadowa and Königgrätz. Similarly, it is equally hard to imagine a leader other than Wilhelm II repeatedly antagonizing Britain for so little purpose” (2001: 134).

Brown argues for the essential role of Gorbachev by arguing against the sufficiency of alternative explanations: “None of these interpretations [(1) learning, (2) power, and (3) domestic political pressure] on its own provides an adequate explanation of the changing Soviet political agenda in the second half of the 1980s, although the first and the third - or a combination of the two - have often been seen as sufficient by their proponents (p. 13) ... It is tempting to see Gorbachev as the handmaiden of history or the embodiment of social forces which, if Gorbachev rather than Dmitry Ustinov had died in December 1984, would have brought forth an alternative leader in the mid-1980s whose policies would have been broadly the same as Gorbachev’s producing similar results. This, however, is a temptation that should be resisted, for it has got little but a ‘retrospective determinism’ to commend it” (Brown 1996: 317).

287. Here are some claims that constitute core ideas of prominent work (both by political scientists and historians) on World War I (we do not include those defended in various chapters of this anthology). In all cases these are central claims made by the author(s). The quotes below are obviously dramatic simplifications of complex arguments but they do capture the core of the scholar’s argument and are useful for classroom discussion. Some are expressed in necessary condition counterfactual terms. Others are not; for these generate some necessary condition counterfactuals. More generally, analyze the causal explanations in them. These can be used as the basis for class discussion or additional reading.

Goemens:

I have to put the blame for four years of war and over ten million deaths squarely on the shoulders of Germany’s regime. If Germany had not been a semirepressive, moderately exclusionary regime, would the war have ended sooner? Such counterfactual claims are notoriously hard to evaluate. . . . An argument can nevertheless be made that a nonrepressive, nonexclusionary Germany would have ended the war before 1918, with 1917 a likely termination year. (Goemans 2000: 314-15, in conclusions)

Ferguson:

Rather than joining the Allied war effort, he [Ferguson] said, Britain should have maintained its neutrality and allowed the Germans to win a limited Continental war against the French and the Germans. In that event, he postulated, Germany whose war aims in 1914 were relatively modest, would have respected the territorial integrity of Belgium, France, and Holland and settled for a German-led European federation. Had Britain “stood aside” he continued, it is likely that the century would have been spared the Bolshevik Revolution, the Second World War, and perhaps even the Holocaust. (Boynton 1999: 43; New Yorker piece on Ferguson’s book)

Geiss:

The events of July and early August 1914 cannot be properly understood without a knowledge of the historical background provided by the preceding decades of Imperialism. On the other hand, that background alone is not sufficient to explain the outbreak of the First World War. Two general historical factors proved to be decisive, and both were fused by a third to produce the explosion known as the First World War. Imperialism, with Wilhelmine *Weltpolitik* as its specifically German version, provided the general framework and the basic tensions; the principle of national self-determination constituted, with its revolutionary potential, a permanent but latent threat to the old dynastic empires and built-up tensions in south-east Europe. The determination of the German Empire – then the most powerful conservative force in the world after Tsarist Russia – to uphold the conservative and monarchic principles by any means against the rising flood of democracy, plus its *Weltpolitik* made war inevitable. (Geiss 1984: 46; original is the introduction of his book *July 1914*)

Taylor:

But there was only one decision which turned the little Balkan conflict between Austria-Hungary and Serbia into a European war. That was the German decision to start general mobilization on 31st July, and that was in turn decisive because of the academic ingenuity with which Schlieffen, now in his grave, had attempted to solve the problem of a two-front war. (Taylor 1969: 101)

Maier:

The irreversible momentum toward general war in 1914 is usually seen as a result of three factors: the hopeless, long-term instability of the Habsburg empire, the rigid structure of opposing alliances, and the inelectuable pull of military preparations. (Maier 1988: 822)

Williamson:

Of all the central actors in 1914, Conrad alone could have – by saying no to Berchtold or expressing hesitation to Franz Joseph or accepting some modified “Halt in Belgrade” – brought the crisis to a more peaceful conclusion. (Williamson 1988: 815-16)

Van Evera:

The consequences of the cult of the offensive are illuminated by imagining the politics of 1914 had European leaders recognized the actual power of the defense... Thus the logic that led Germany to provoke the 1914 crisis would have been undermined, and the chain reaction by which the war spread outward from the Balkans would have been very improbable. In all likelihood, the Austro-Serbian conflict would have been a minor and soon-forgotten disturbance on the periphery of European politics. (Van Evera 1984: 105)

Snyder:

These war plans and the offensive doctrines behind them were in themselves an important and perhaps decisive cause of the war. (Snyder 1984: 108) In short, the European militaries cannot be blamed for the belligerent diplomacy that set the ball rolling towards World War I. Once the process began, however, their penchant for offense and their quickness to view war as inevitable created a slide towards war that the diplomats did not foresee. (Snyder 1984: 138-39)

Trachtenberg:

If in 1914 everyone understood the system and knew, for example, that a Russian or German general mobilization would lead to war, and if, in addition, the political authorities were free agents – that is, if their hands were not being forced by military imperatives, or by pressure from the generals – then the existence of the system of interlocking mobilization plans could hardly be said in itself to have been a “cause” of war because, once it was set off, the time for negotiation was cut short. But if the working of the system was understood in advance, a decision for general mobilization was a decision for war; statesmen would be opting for war with their eyes open. To argue that the system was, in such a case, a “cause” of war makes about as much sense as saying that any military operation which marked the effective beginning of hostilities ... was a real “cause” of an armed conflict (Trachtenberg 1990-1: 122)

Sagan:

If Grey had given a clear warning earlier, *if* the Czar had further delayed Russian mobilization against Austria and then Germany, and *if* the German offensive war plans had not been able to depend upon a preemptive *coup de main* against Liege and the decisive battle in France before Russian mobilization was completed in the East, *then* it is possible, just possible, that Bethmann-Hollweg would have had the time and the courage necessary to apply sufficient pressure on Vienna to accept the “Halt in Belgrade.” And if this had occurred, 1914 might today appear as only another one of series of Balkan crises that almost led to a world war. (Sagan 1986: 169)

Riker:

The process of confusion concerning the cause of α [World War I], which, being ambiguous, cannot properly be said to have a cause, starts with the assertion that the cause of B [the Austro-Serbian war] is the assassination at Sarajevo, event D. It can perhaps be demonstrated by valid arguments – or at least by arguments likely to be accepted by many historians – that the assassination of Franz Ferdinand is a sufficient condition of the Austro-Serbian war; and (somewhat dubiously, however) it can even be argued that it is was a necessary condition. (Riker 1957: 63-4)

Research design and generalization

288. Selecting on the dependent variable is legitimate for necessary condition hypotheses. Explain why.

Answer:

For a clear discussion see Dion (2003) or Harvey (2003). The short answer is that a necessary condition hypothesis says that we should see X present when Y occurs. Hence the test starts by looking why Y occurs, i.e., selecting on the dependent variable. See Harvey for a discussion of how this has been ignored in the literature on selection and deterrence (e.g., Achen and Snidal 1987). Dion (2003) uses Skocpol as one of his main examples.

289. Geddes (2003) emphasizes the importance of variation on the dependent variable. But, variation on the independent variable is also important. Analyze her

test of Skocpol's theory in terms of variation on the two key independent variables.

Answer:

She selects *only* cases of agrarian revolt for her analysis so there is no variation on this independent variable. What she is in fact testing is the interaction of agrarian revolt and state breakdown (which does have variation). Typically, statistical interaction terms include variation on both variables.

290. One important question is the extent to which two-level or fuzzy set models/methods differ from statistical ones. Examine Geddes's figures 3.5 and 3.6. She finds no linear relationship between labor repression and economic growth. Draw a new horizontal and vertical through these figures which gives a 2×2 table that nicely supports the hypothesis that labor repression is a necessary condition for high economic growth.

Answer:

One can easily draw horizontal and vertical lines through her scatter plot to show that her data support the necessary condition hypothesis. Just draw a horizontal line at around 4% GDP growth and the vertical line at 1.5 labor repression.

The Possibility Principle

291. McAdam and Boudet explore why environmental social movements arise. Discuss how they use the Possibility Principle to select communities "at risk" of an environmental social movement.

"That is, instead of selecting successful movements for study, we chose to research communities "at risk" for mobilization by virtue of their shared exposure to the "threat" of environmentally risky energy projects. (McAdam and Boudet 2012, 179)

"Because all large, potentially controversial, infrastructure projects are required to file an EIS, these records provide a population of communities at risk for mobilization. Thus our cases were drawn from the CSA Illumina's Digests of Environmental Impact Statements, which contains all EISs from the Federal Register. The population of cases was limited to proposals for new energy infrastructure projects in which a Final EIS was completed between 2004 and 2007 (N = 49). We chose projects that had completed a Final EIS in to ensure that the window for potential collective action would be closed once the study commenced. After drawing a random sample of twenty cases, three of them (15% of the sampling frame) were dropped because it was not feasible to conduct subsequent data collection due to the difficulty in attaining local newspaper records. The sample was then supplemented with three California projects for which data had already been The final sample consists of twenty communities responding to eighteen projects in twelve states regarding proposals for LNG terminals (13 cases), nuclear-related projects (2), a hydroelectric project, a wind farm, and a cogeneration project to supply electricity to an existing oil refinery" (McAdam and Boudet 2012, 36).

292. Howell and Pevehouse in their analysis of Congressional impact on decisions to use military force rely on a dataset of “opportunities to use force” (2007, see Appendix B). For example, “we identify a wide variety of opportunities to exercise force abroad. The database inventories the following kinds of crises: attacks on United States embassies and consulates; instances when United States ambassadors, consuls, or military personnel are killed; hijackings that include human casualties; stateside attacks perpetrated by foreign groups; civil wars; interstate armed clashes; . . .” (p. 248). Discuss the extent to which the Possibility Principle is used to constitute a “possible use of military force by the President of the USA.”

293. Fordham (2011) looks at the creation of major powers. Explain how using the Possibility Principle would significantly change the case selection research design.

Answer:

He uses all states as potential major powers, clearly there are only a small number of states that are potential major powers.

294. Possibility Principle. One case selection issue deals with cases some individuals - in this case states - are eligible to sign a treaty (dependent variable) while others are not. Only countries in the region are eligible to sign those treaties. The question is what do in this situation. Alcañiz includes in her study global treaties and regional treaties. Here is Alcañiz’s solution (2012, 325): “the dummy variable Regional that takes the value of 1 if a treaty is open to a restricted menu of members or 0 if it is open to all countries: “it is important to highlight that the universe of countries for regional treaties is restricted to eligible members. Valid subjects for the Tlatelolco treaty, for example, will include only countries of Latin America to which the treaty was open to signature.” Is this the best or correct solution?

Answer:

The dummy variable is not correct. For example, all survival models assume that $0 < P(Y = 1) < 1$. Notice that the probability is assumed to be greater than zero, however, we know that the probability that European countries will sign a Latin American treaty is zero.

The simple solution is just to remove the observations of countries not eligible to sign a treaty.

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297. While the Possibility Principle is most often used to choose cases, it can also be used to create measures and variables. Describe how Mansfield and Pevehouse use the Possibility Principle in their study of the impact of IGOs on democratization. What role is the Possibility Principle playing in indicator or variable construction?

Our argument centers on the demand for IO membership by democratizing countries. We have implicitly assumed that the supply of IOs is constant across countries. However, not all countries are eligible to join every IO. Consequently, we reestimate the three original models after adding a variable measuring the number of possible organizations that state i could enter in year t : This variable is the ratio of the number of IOs that state i participates in to the number of IOs it could participate in, where we assume that this state has the opportunity to join every universal organization (e.g., the United Nations) and every organization in its geographical region (Mansfield and Pevehouse 2006, 154). In no case is this new variable statistically significant, nor does including it alter the coefficients of the other variables in the model. (Mansfield and Pevehouse 2008, 279).

Answer:

They assume that every country *can* join every universal IGO, similarly they assume that every country in a region *can* join a regional organization. In practice they may not really be true. For example, can Israel join the Arab League?

The role of the Possibility Principle is to standardize the IGO variable. So instead of the raw number of organization that a country is a member of, it is the number of memberships divided by the number of possible memberships.

298. One potentially interesting new variant on the Possibility Principle uses negative cases on the *dependent variable* to defining negative cases. If the dependent variable is defined using the necessary condition structure then one can convert the AND to OR as per the Possibility Principle. Then take as negative cases all cases with at least one necessary condition present on the dependent variable. Discuss this idea. (Thanks to Sverre Bodung for suggesting this idea.)
299. Just before he died David Freedman wrote a critique of Possibility Principle (Freedman 2009). Freedman discusses the Rule of Inclusion in terms of a bivariate, 2×2 table. He states that the Rule of Inclusion is bad practice because

it leads to including no cases in the $(X_1 = 0, Y = 0)$ cell. The Rule of Exclusion is typically a bivariate case selection rule, but the Rule of Inclusion is a multivariate principle. Show, using the Skocpol data, how when one has multiple independent variables (i.e., 2 or more) that in general there will be cases of $(X_1 = 0, Y = 0)$ and $(X_2 = 0, Y = 0)$. Explain which cases one will in fact not be included.

Answer:

Using the Rule of Inclusion in the multivariate setting will almost always give cases in the $(X_1 = 0, Y = 0)$ and $(X_2 = 0, Y = 0)$ cells. This occurs because cases of, say, $(X_1 = 1, Y = 0)$ will sometimes have value 0 for X_2 . In short, following the Rule of Inclusion one typically has cases of $(X_1 = 1, X_2 = 0, Y = 0)$ and $(X_1 = 0, X_2 = 1, Y = 0)$. What one does not have are cases of $(X_1 = 0, X_2 = 0, Y = 0)$. You can see this by looking at the universe of all cases used to test Skocpol's theory which clearly do have cases of $(X_1 = 0, Y = 0)$ and $(X_2 = 0, Y = 0)$.

300. Kroenig has as his main hypothesis "Hypothesis 1: The more powerful a state is relative to a potential nuclear recipient state, the less likely it will be to provide sensitive nuclear assistance to that state" (2009, 116). He uses an "all cases" research design to test this: "Potential nuclear recipients are all nonnuclear weapon states in the international system" (p. 177). Using the Possibility Principle discuss how this research design decision will include many cases which support his hypothesis, but which might be considered irrelevant for such a test.

Answer:

Very small and poor countries might be considered as irrelevant for this test. Since the main hypothesis is about relative power, these cases combined with nuclear suppliers (i.e., powerful countries) will be cases in support of his hypothesis, e.g., France-Fiji.

301. What constitutes "potential mediators" in the study of international conflict mediation, e.g., Frazier 2006?
302. Describe how the Possibility Principle is used in a number of studies that test the influence of rules of war, such as Morrow (2007), Valentino et al. (2006), Downes (2006).

Answer:

Only cases where the state had the capability to violate the rules of war are used. For example, Downes (see the Appendix of his article) only includes states that had the capability to target civilians of the adversary during the war.

303. Collier and Sambanis's (2005) *Understanding civil war: evidence and analysis* chose negative cases based on "high risk." What is definition of high risk? Could you choose cases in gray zone on the dependent variable (they use a dichotomous dependent variable)?
304. Describe the concept structure used to construct politically relevant dyads as a population in conflict research. Once you understand the structure could you easily expand the definition of politically relevant dyads?

Answer:

The family resemblance structure is used because it uses a rule of the general form “If any of the criteria is met then include the observation.” In this case the list is (1) major power status or (2) contiguity. You could just extend the list. For example, Quackenbush (2006) adds alliances to the list.

305. There exists a large literature on diversionary war (see Levy 1989 for a survey). Discuss how the Possibility Principle is used or not to (or should be and is not) to decide on the population of cases to analyze. Notice that some use the concept “opportunities” to use force as the unit of analysis (e.g., Meernik 1994, 2000). See Foster (2006) for an explicit look at “opportunities” as a function of major power status. Using the discussion in chapter 8 discuss a potential problem with Foster’s choice of population to be analyzed and the main variables he wants to test. See also the question regarding Andy Bennett’s decisions about opportunities to intervene in his analysis of USSR behavior. Also, contrast the case selection in Ostrom and Job (1986) with that of Meernik (1994) and make the analogy to the politically relevant versus all dyad debate. See Mitchell and Prins (2004) for another way to think about opportunities for diversion.

Answer:

Foster wants to explore the impact of major power status on diversionary use of force. It is hard to find it but a footnote in table 1 indicates he used politically relevant dyads. Hence, he is using the same variable to choose populations as he is looking at in the main statistical analysis.

Ostrom and Job base their analyses on time periods, i.e., quarterly data setup. Underlying this is the view that the US always has an opportunity to use force. They propose and Meernik follows up on the idea that a dataset on opportunities to use force would be a better research design. Notice that the impact of domestic politics (the key finding in Ostrom and Job) disappears in the Meernik study.

306. The problem of relevant case selection arises in the literature on the intervention of third parties in ongoing conflicts. If it is unlikely that minor powers get involved in conflicts in distant regions it is probably even less likely that they intervene in a partisan fashion in ongoing international or civil war. The Possibility Principle eliminates cases from the population under (statistical) analysis. An alternative approach is to model in a separate equation those states that are likely to intervene at all and then look at issues of which side. One way to think about this is “mixture cure” models:

Thus we estimate, instead of standard survival models, “mixture cure” models (e.g., Sposto 2002; see the online appendix at <http://journalofpolitics.org/> for technical details and additional references). These models contain an additional binary regression component to model the probability of the event occurring eventually and to correct the hazard/duration model portion. Estimating the mixture cure model with competing risks confers two major advantages: (1) We avoid having to address the above-mentioned problematic assumption of standard survival models by first defining, then analyzing only “relevant” states. This approach would invariably have resulted in exclusion of cases of intervention by “nonrelevant” states. (2) We are able

to ascertain simultaneously what factors affect the probability of intervention, the hazard/timing of the intervention (given the decision to intervene), and the side on which the intervention occurs. (Findley and Teo 2006, 833)

Note that this is similar in spirit to the zero-inflated Poisson models (Chin and Quddus 2003) which attempt to separately model the zero occurrences from the nonzero ones. Discuss these statistical alternatives which separately model the “irrelevant” cases.

Answer:

A key thing to keep in mind in the application of the mixture cure model is any given variable which appears in both equations must be considered carefully since the “total” impact is the combination of the two. This may be hard to disentangle because in the variable only influences the hazard rate in the selection equation.

Notice that the Findley and Teo argument also implicitly refers to the problem in the conflict literature where using politically relevant dyads as a population selection device (as opposed to a zero-case selection device) excludes the “impossible happens” cases.

It is important to realize that these statistical approaches as well as the Possibility Principle apply a theoretical or empirical model. One needs to consider which model is better. When the impossible happens is clearly error in the Possibility Principle model. However, it may be the case that zero-case model in the mixture cure performs poorly in modeling the hazard rate.

307. King and Zeng (2007) have presented a large-N argument about counterfactuals. Basically the article deals with the perils of extrapolation and a technique for deciding when a counterfactual is an extrapolation outside the data. Basically, counterfactuals within the data are more reliable than extrapolations outside it: a bit of conventional wisdom. One conclusion from this methodology is that one should collect more data to increase the region covered by the data; a conclusion not too surprising from a quantitative methods point of view. Use the Possibility Principle cube to think about these issues.

(1) It is quite possible for counterfactuals within the boundaries of the data to be quite distant from actual data points. Illustrate this in the cube.

(2) Use the cube to show how counterfactuals outside the data might be closer to actual data points than points in the data cube.

(3) Use the democracy and war literature to illustrate how interpolation might be more problematic than extrapolation.

(4) Applying the Possibility Principle principle usually means reducing the size of the sample space, while King and Zeng implicitly argue for increasing it. However, both argue that causal or counterfactuals are best made with contrasting cases that are “close” to each other. Discuss.

Answer:

For (1) and (2) put points at the corners, and a few outside the corners and leave the middle of the cube empty.

The democratic peace literature is paralleled by a small “autocratic” peace literature. But there is a fair amount of evidence that hybrid or transitional regimes

are more war prone. Hence interpolation of causal effects may not work in this case. Also, extrapolation to higher quality democracy is probably going to be more valid than interpolation to gray zone democracies.

For (4) the key issue hidden by the King and Zeng article is that one wants to make contrasts with cases that are nearby. Data in the convex hull may be more distant than data outside it. The Possibility Principle says that increasing the convex hull may be counter-productive if the contrasting cases are too far away.

308. A very important theoretical and policy issue is the evaluation and counting of the number of “poor” people in the world. The World Bank is very involved such efforts (e.g., Chen and Ravallion 2001) and concludes, controversially, that amount of poverty has decreased over the last 20–30 years. Typically the World Bank model uses an “international poverty line,” typically an income of \$1 US per day. Incomes in local currencies must then be converted into US dollars to evaluate the extent of poverty. Purchasing power parities (PPP) are used to do this. These are general figures based on a “basket” of goods and the cost of that basket in different countries, and are often used to make GNP/capita comparisons. These PPP values then provide the conversion rates of local currency into US dollars which make world-wide evaluation of poverty possible. Discuss how the Possibility Principle is relevant when the basket of goods consists of a wide range of goods, but when the goal is to evaluate poverty.

Answer:

See Reddy and Pogge (2005) for an extensive discussion. Basically, PPP data use a wide variety of goods that are irrelevant for assessing poverty. PPP depends on the relative price of things like, say, SUVs, which are not relevant for assessing poverty. The relative price of SUVs influences PPP data which may distort the relative costs of things that are really important to poor people, like food. For example, it may be that bread is relatively more expensive in poor countries than in rich (this is often true in poor neighborhoods in the United States compared to middle-class ones). If this is generally true between countries then PPP underestimates the extent of poverty in the world. Hence one would ideally like a PPP that only uses goods that are consumed by poor people, such as food, housing, and medical care.

For the mathematically inclined, one can easily use Reddy and Pogge (2005) to devise an exercise that uses basic calculus (i.e., derivatives) to make the point of the exercise.

309. The Possibility Principle can play an important role in concept/measure construction when the number of zeros has a large impact on the resulting measure. Explain how the S measure of dyadic interstate preferences (Signorino and Ritter 1999) is sensitive to this when using all dyads versus politically relevant dyads. Why do all the many politically irrelevant cases have an influence?

Answer:

See Sweeney and Keshk (2005) for an extensive discussion. Basically, all the politically irrelevant dyads have similar preferences and hence one gets a huge number of cases with high preference similarity (e.g., the vast majority of cases have a value near the maximum of 1.00).

310. Sometimes the Possibility Principle is related to truncation on the dependent variable which appears in case selection. For example, the dependent variable could be US foreign direct investment (Oneal 1994) or terrorist actions (Li 2005; Enders and Sandler 2005). Sometimes the cross-sectional cases are only those countries with a positive value on the dependent variable, for example, those that actually got foreign direct investment or had a terrorist act over the period in study. Explain how the Possibility Principle relates to this kind of potential selection bias. In practice which would be worse the US foreign direct investment case or the terrorism case?

Answer:

Implicitly the Possibility Principle is used because countries that, for example, did not receive US direct investment are perhaps assumed to be those where it was in some sense impossible. US legislation forbids investment in some countries, e.g., Cuba. Of course, there might be cases where there is no economic value in such investments but those cases one would want to include. (Note that FDI raw data often have positive and negative values for inflows and outflows. Some authors take the log which then typically means throwing out all the negative and zero cases.)

The issue is probably less severe in the literature on terrorism. As a matter of history (or historical accident if you prefer) there have been terrorist incidents in almost all countries of any size (e.g., about 120 according to Li 2005). Thus the exclusion of countries who have not had a terrorist incident is not likely to have much practical effect. However, if it were the case that only 60 countries had had terrorist incidents then this issue would become important. Some authors include all cases and then try model the zero cases separately with techniques like zero-inflated Poisson (Chin and Qudus 2003).

311. The Possibility Principle can be used in indicator construction as well. A major issue in the political and economic analysis of countries is their degree of ethnic fractionalization. A large literature in economics (e.g., starting with Easterly and Levine 1997) deals with its impact on economic growth. Clearly ethnic variables have played a large role in the analysis of civil wars and genocide. How might the Possibility Principle be used to think about which ethnic groups to include in an index of ethnic fractionalization in ways similar to the way politically relevant dyads are used to study international conflict?

Answer:

Posner (2004) develops a measure of ethnic fractionalization-what he calls Politically Relevant Ethnic Groups (PREG)-based on the logic of the Possibility Principle and politically relevant dyads:

The crux of the problem is that the *Atlas* data from which the ELF index was calculated enumerates dozens of groups in each country that may be culturally or linguistically distinct from their neighbors but that are irrelevant as independent political actors. . . . Let me be clear: my assertion is not that the many ethnic groups included in the *Atlas* (and, often, in the newer measures) are unimportant *per se*. Rather, my claim is that these groups are unimportant for the explicitly political mechanism that the researchers are trying to test. To capture the contribution that a country's ethnic heterogeneity makes to its policymaking process requires an index of fractionalization

that reflects the groups *that are actually doing the competing over policy*, not the ones that an ethnographer happens to identify as representing distinct cultural units. (Posner 2004, 853)

312. The Possibility Principle is closely related to scope conditions. The welfare state literature only looks at wealthy countries. Much of the literature on well-being focuses on poor or destitute countries (Dasgupta 1990). When Dasgupta examines the relative destitution of countries he excludes the well off ones. He uses the Borda Rule (Dasgupta and Weale 1992) to aggregate a variety of indicators of well-being, such as infant mortality, literacy, per capita income civil and political rights. The Borda Rule ranks countries on each dimension then sums the ranks (see Fine and Fine 1974 for an extensive and technical discussion of its formal properties). Explain why this concept of human destitution or well-being is sensitive to the exclusion of wealthy countries. For example, the comparison of India and China will significantly be affected by the inclusion or exclusion of nonpoor countries.

Answer:

As Dasgupta and Weale note, the Borda Rule is sensitive to the population chosen because the distance between a pair of countries depends on the population. In particular, if an alternative population puts countries in between a given pair their overall rankings (and hence the comparison between the two) can change. Particularly with regarding to civil and political rights the inclusion of wealthy countries can change the comparison because these are scattered throughout the ranking.

313. Fox and Lawless (2004, 2005) study the phenomenon of “nascent political ambition” in American politics. They need to gather data on those who “might” run for office. Explain how they use the Possibility Principle in designing their large-N survey (see Maetas et al. 2006 for another approach).

Answer:

To form their population for sampling they look at the professions of people *who have already run for office or already hold office*. In accordance with the Possibility Principle they use those that have run or hold office to determine the population of those who might run for office: “Despite the theoretical importance of studying nascent political ambition, a number of methodological and sample design issues make conducting an empirical investigation quite difficult. The complexity of assembling a national sample of potential candidates, alone, explains why most research on political ambition and candidate emergence focuses on declared candidates and office holders. In an attempt to overcome these difficulties, we developed the “eligibility pool approach,” which we carried out in the Citizen Political Ambition Study. We drew a national sample of 6,800 individuals from the professions and backgrounds that tend to yield the highest proportion of political candidacies: law, business, education, and political/community activism.” (Fox and Lawless 2005, 647)

Note also that the other approach to sampling in this area the “reputational approach” starts by starting with office-holders (i.e., people who have been candidates AND successful) as a place to get names of “prospective” or “viable” candidates (e.g., Stone and Maisel 2003).

314. Many theories of coalition government formation rely on formal models where a key variable is the bargaining power of the potential coalition partners. Ansolabehere et al. (2005) describe a method for calculating “voting weights” based on a calculation of all possible minimal winning coalitions (p. 555; see also Warwick and Druckman 2006). Explain how you could use the Possibility Principle to improve this method of calculating weights? (See Waters 1998 for a philosophical discussion and example-using the analogy with copper as used in the book-of how one would think about the about the minimum winning coalition problem)

Answer:

“All possible minimal winning coalitions” includes many coalitions that are very unlikely to happen (e.g., between extreme left and right parties). It would be better to include only those minimal winning coalitions with any real likelihood of forming. Notice that doing so would require using theory and data about what kinds of coalitions actually do form (i.e., a theory of the positive outcome). For example, Warwick and Druckman mention this common critique: “A common critique leveled against measures such as these [of bargaining power] is that they assume that all coalitions are equally likely to occur.” (Warwick and Druckman 2006, 645).

315. Explain the two variables in Singh and Way’s quantitative analysis of nuclear proliferation (2004) that could be used with the Possibility Principle. What in their discussion and empirical results would support such a view? Note that the IAEA has category of “nuclear latent states”; does this concept invoke the Possibility Principle?

Answer:

They clearly argue that technological/industrial capacity is a necessary condition for nuclear weapons acquisition: “there are numerous examples of states that have had the technical capacity to build nuclear arms for several decades but have never attempted to do so. However, we argue that it is an important starting point because no nation can build nuclear weapons without attaining a minimal economic/technological capacity” (p. 862)

“Every country to acquire nuclear weapons, with the exception of Pakistan, was above the threshold embodied in the [industrial capability] index.” (p. 875 footnote 30)

They also note empirically that the existence of a rivalry is basically a necessary condition: “This is not surprising when one recalls that of the countries to acquire nuclear weapons, all but two (South Africa and France) are coded as participating in an enduring rivalry at the time of acquisition. By alternate but defensible coding rules, one could make the case that both of these exceptions were involved in enduring rivalries.” (p. 875)

Also, the empirical results show that the industrial variable and the enduring rivalry variable have extremely large effects, with rivalry having from a 380% to 740% impact and industrial capacity 560% to 2,340% effect. No other variables are even close to this.

316. In the large-N study of US foreign aid – or foreign aid in general – one must choose a population of cases. This involves deciding whether to use all countries or some subset that “might” receive foreign aid. What might be a criterion to exclude a set of countries that almost never get foreign aid (e.g., Lai 2003; see also Kosack and Tobin 2006 who contrast development aid with foreign direct investment in a world-wide sample). See also Carey (2007) for another approach to choosing cases based on who already receives aid.

The same question can be asked in studies of U.S. arms exports. Examine Blanton (2005). Are developed countries excluded? Should they be included or excluded? What effect might that have on the results? Where can you see the logic of the Possibility Principle in her argument?

Answer:

OECD countries almost never receive foreign aid. More generally, aid is not given to rich countries. One does not give foreign aid to Sweden and Switzerland.

In Blanton all developed countries are excluded. So this means including Saudi Arabia but excluding Israel. Arms transfer certainly do occur to developed countries so it is not completely clear (other than the convention of excluding them in these studies) why they should be excluded. The section “A two-stage model” clearly uses the logic of the Possibility Principle. This also illustrates the close connection of the Possibility Principle to Heckman selection models.

317. In the large-N quantitative conflict literature some researchers prefer to use directed dyads instead of the more common undirected dyad approach. The non-directed dyad only includes one case per dyad-year, e.g., US-USSR. The directed dyad includes two, US-USSR and USSR-US. One advantage of the directed dyad is that it allows you to look at dispute/war initiation. For example, Bennett and Stam (2004) argue that “Given that we want to study initiations, the correct population to employ includes cases where there could have been MID initiation.” (p. 55). One problem they then have is what to do in with directed dyad BA when A has already initiated a dispute against B. Discuss whether it is “possible” then for B to initiate a dispute with A (in the same year) and thus whether one should keep (or not) the BA directed dyad in the population.

Answer:

It turns out that there are about 150 cases where two countries have multiple disputes within the same year (Goertz, Jones and Diehl 2005). Bennett and Stam argue (p. 55–56) that one should *exclude* the BA directed dyad when a AB dispute exists. However, if there does happen to be a BA MID they do include it in the analysis. Notice that this is the opposite of the way politically relevant dyads work, since the impossible-but-happens cases are excluded.

318. Przeworski et al. (2000) in their influential book, define democracy dichotomously based on the necessary and sufficient condition view of concepts, with four dichotomous indicators. When using democracy as a dependent variable (or independent variable for that matter) there is only one way that a country can be coded as a democracy (i.e., one on all four indicators) while there are $2^4 - 1 = 15$ ways a zero can be coded. This suggests that potentially there is significant heterogeneity among the negative, zero cases. Redo one of their

analyses using different negative cases (i.e., using 1, 2, 3, or 4 zeros to constitute the negative case population).

Answer:

See Goertz (2008) for an extensive discussion of this point and reanalysis of the Przeworski et al. data.

319. Use Licklider's findings (1995, table 3, p. 687) in conjunction with Harff (2003) to think about case selection in the analysis of civil wars and genocide/politicide.

Answer:

Negotiated settlement is sufficient condition for no genocide. Military victory is necessary condition for genocide.

320. In the geometric representation of the Possibility Principle we used a cut-off of .50. We think that in practice, qualitative researchers will tend to chose much high cutoffs. Discuss whether you think this is true. Can you think of relevant examples? If it is true why do qualitative researchers do this?

321. Some researchers believe that one should look at "revolutionary situations" instead of revolutions:

[W]e can clear a good deal of conceptual ground by means of a simple distinction between *revolutionary situations* and *revolutionary outcomes*. Most significant disagreement about the proper definition of revolution falls somewhere along these two dimensions. (Tilly 1978, cited in Walton 1984, 11; see figure in Tilly 1978)

Explain how the idea of a revolutionary situation relates to the Possibility Principle.

Answer:

The quotation from Tilly suggests that one might use the concept of "revolutionary situation" to define cases where the outcome of (successful) revolution is possible. Hence, in a study of revolutionary outcomes, appropriate negative cases might be revolutionary situations that did not culminate in revolutionary outcomes.

See Stinchcombe for a related point: "Rather than explaining the occurrence of revolution, a sociological theory ought to try to explain the occurrence of a 'revolutionary situation.' Whether or not a change in the ruling powers of a society takes place by means of violence depends both on the predisposing characteristics of the social structure and on concrete military and political situations at given historical times" (1965, 169).

322. Chapter 7 discusses how the Possibility Principle can be applied to a theory of high growth in the NICs. Could this theory for the NICs also be used to form a cube like that presented with Skocpol's argument?

Answer:

Yes, the theory for the NICs appears to have the same basic form as Skocpol's theory - i.e., two causes that are individually necessary and jointly sufficient for

an outcome. In this case, the two causes are (1) ISI policies for light industrialization, and (2) EOI policies for heavy industrialization. The outcome is exceptional economic growth.

323. The cube in Figure 2 presents three zones with disconfirming cases. But in qualitative research the zone near the right-back-bottom (1,1,0) corner is often the most important one for falsifying theories. Why?

Answer:

Necessary condition hypotheses are disconfirmed by cases where the outcome takes place (located in the top half of the cube). Sufficient condition hypotheses are disconfirmed by cases where the outcome does not happen (located in the bottom half of the cube).

In qualitative research, analysts are often quite familiar with many or all positive cases. As a result, they may be less likely to build theories that are obviously disconfirmed by positive cases. By contrast, they may be less knowledgeable about nonpositive cases, such that these cases may be more likely to disconfirm their theories. The right-back-bottom (1,1,0) corner is where all of these disconfirming nonpositive cases will be located.

324. Explain how Andy Bennett in his *Condemned to repetition? The rise, fall, and reprise of Soviet-Russian military interventionism, 1973-1996*, (1999, chapter 1) faced the Raven Paradox problem and how he implicitly used the Possibility Principle to solve it.

Answer:

Bennett's outcome is Soviet/Russian intervention, and he must decide which nonpositive cases are relevant for theory testing. He uses the Rule of Inclusion to inform this choice. Bennett (1999) uses this logic when selecting cases to test a theory of the causes of Soviet and Russian military intervention. He identifies five factors that provide "opportunities" for intervention, such as the presence of a pro-Soviet/Russian faction or a low level of U.S. threat. He then considers as relevant only those countries or territories where one or more of these factors provided the opportunity for intervention; he does not consider the vast majority of countries or territories, because Soviet or Russian intervention was simply not possible in these cases.

325. Explain how the the Possibility Principle is crucial to the large-N study of war. For example, Vasquez in his ISA presidential address: "Of course, many such dyads do not go to war simply because they do not have any conflict with each other or the opportunity to engage in militarized confrontation. Therefore, the analysis will be confined to only dyads that actually engage in the threat or use of force, what has been called involvement in a militarized interstate dispute (MID)" (Vasquez 2004, 2).

Answer:

The militarized dispute dataset (Jones et al. 1996) was originally developed so that scholars would be able to study a set of cases where war was possible. The Singer and Small war data set existed but there was no set of negative cases to compare it against. Hence, the militarized dispute data set helped scholars identify appropriate negative cases.

326. Read Barbara Harff's (2003) article on genocide. Explain how she (informally) uses the Possibility Principle to select her cases. Does she primarily use the Rule of Inclusion or the Rule of Exclusion to eliminate irrelevant cases?

Answer:

Harff uses the rule of exclusion to remove cases where genocide is impossible. In particular, she excludes all cases that lack a causal factor (political upheaval) that is almost always necessary for genocide.

Harff (2003) notes that almost all genocides (i.e., 36 out of 37) occur during or immediately after political upheavals. Accordingly, she excludes cases like France and Canada that lack political upheaval when testing her theory of genocide. These politically stable cases have such a low probability of experiencing genocide that their inclusion would distort inferences about other cases where the outcome of interest is possible. For example, one may have a theory of genocide that highlights ethnic divisions as a key independent variable. Under the Rule of Inclusion, contemporary Canada could therefore be considered a relevant case. However, under Harff's (2003) exclusion criterion, Canada is irrelevant because its value on the political upheaval variable eliminates it from the analysis.

327. The quantitative conflict literature uses "politically relevant dyads" to apply the Possibility Principle to select cases. Mahoney and Goertz suggest that the total population is the union of negative cases (selected with Possibility Principle) and the positive cases. However, the conflict literature uses a different procedure to determine the total population of cases. What is that procedure? How does that influence what the researcher does when the "impossible happens?"

Answer:

The quantitative literature on politically relevant dyads adopts the following procedure: (1) use the Possibility Principle to distinguish relevant and irrelevant cases, (2) treat the relevant cases as the whole population of interest, and (3) select the positive cases as a subset of this population. As a result of this procedure, a mistake in step one can cause positive cases to be coded as irrelevant, such that the impossible happens.

328. Does the state failure (<http://www.cidcm.umd.edu/inscr/stfail/>) project use the Possibility Principle to select cases? If so, how? If not, should it use that principle?

Answer:

The project does not exclude cases where state failure is impossible, and thus the project does not employ the Possibility Principle. The project might reach different results if the Possibility Principle were applied. For example, the application of this principle might lead to the exclusion of many or most of the advanced industrial democracies. In turn, with the new population of relevant cases, different results could emerge.

329. What would be the set of appropriate negative cases for the following Boolean theory?

$$Y = A + B + C + D \quad (2)$$

Does this contradict the Possibility Principle? Why does this example not fit the general kind of problem that typifies case selection in small-N studies? Hint: Which combinations of A , B , C , and D predict that Y does *not* occur? (Thanks to Charles Ragin for this exercise.)

Answer:

This is a question dealing with the logic of the Possibility Principle. The problem here is that if we followed the Possibility Principle for selecting negative cases, we would not have any negative cases at all since the Possibility Principle *excludes* all cases where A - D are absent (i.e., not- A AND not- B AND not- C AND not- D , this is a hint in the question). But this is exactly the set of cases we need to test the Boolean theory $Y = A + B + C + D$. This situation arises because A - D are individually sufficient for Y . However, models like $Y = A + B + C + D$ are extremely rare in the qualitative-comparative literature.

330. Skocpol considers the Cuban Revolution (1959) to be irrelevant for directly testing her theory. Do you think she excludes this case using the Possibility Principle or scope conditions? Why?

Answer:

Skocpol must be using scope conditions – not the Possibility Principle – to exclude the Cuban Revolution, given that the Possibility Principle excludes only cases where the outcome of interest is absent.

331. Explain how the cube provides a visual summary of disconfirming observations for necessary and/or sufficient condition hypothesis.

Answer:

With a necessary condition hypothesis, theory disconfirmation occurs when the necessary condition is absent, but the outcome of interest is present. Thus, disconfirming cases are located in the top portion of the cube where only one necessary condition is present (i.e., the (1,0,1) and (0,1,1) corners).

With a sufficient condition hypothesis, theory disconfirmation occurs when the sufficient condition is present, but the outcome of interest is absent. Thus, disconfirming cases are located in the bottom portion of the cube where the two jointly sufficient causes are present (i.e., the (1,1,0) corner).

332. Seawright (2002; see Clarke 2002 and Braumoeller and Goertz 2002 for responses) argues that one should use “all cases” for testing hypotheses concerning necessary or sufficient conditions. Explain how the Possibility Principle and the Raven paradox enter into this debate.

Answer:

Much of the debate centers around the issue of which nonpositive cases are relevant for theory testing. Seawright suggests that all cases in an “appropriately defined universe” are relevant to testing a proposition about causal sufficiency, even negative cases that lack the hypothesized sufficient cause. He shows that the inclusion of all cases can substantially enhance statistical significance by increasing the number of confirming observations. By contrast, Clarke argues that including all cases will lead one to confirm a proposition through irrelevant

observations, in much the same way that “most ravens are white” might be confirmed by observing yellow pencils and blue books. Braumoeller and Goertz’s argument likewise suggests that, when testing a hypothesis about a sufficient cause, cases that lack both the cause and the outcome are irrelevant, since the hypothesis does not imply anything about the number or proportion of these cases that should be present.

333. Find the parameter that can change dramatically depending on whether one applies the Possibility Principle or not in King and Zeng’s (King and Zeng 2001a) discussion of statistical estimation in rare events data. For a similar problem see also King and Zeng (2001b).

Answer:

“Prior correction requires knowledge of the fraction of ones in the population, τ . Fortunately, τ is straightforward to determine in international conflict data since the number of conflicts is the subject of the study and the denominator, the population of countries or dyads, is easy to count even if not entirely in the analysis.” (King and Zeng 2001a, 144).

In King and Zeng (2001b) one should note similarly that relative risk involves calculations using baseline probabilities ($Pr(Y = 0)$ or $Pr(Y = 1)$) so that $Pr(Y = 1)$ will be much lower with all dyad design.

334. The welfare state literature typically excludes less-developed countries. Is this because of scope conditions or the Possibility Principle? If it is the Possibility Principle, is it the Rule of Inclusion or Rule of Exclusion?

Answer:

To avoid these problems, many analysts of welfare states include only OECD countries (see Pierson 2000; Amenta 2003 for recent reviews). Typically, they justify the exclusion of poorer countries through the use of scope conditions. However, they exclude *only* negative cases, and so they are really employing the Possibility Principle, not scope conditions. In particular, they use the Rule of Exclusion to eliminate countries that possess a condition sufficient for the absence of welfare state development—namely, poverty. Indeed, the finding that economic wealth is related to welfare state development among all countries but not among rich countries is what we would expect if all cases are homogeneous (i.e., if scope conditions do not apply).

335. Fuzzy-set analysis is often problematic when there are many observations near the origin (i.e., observations whose values on all variables approach zero). When observations are near the origin it is extremely easy for them to pass tests of sufficiency since X is likely to be less than Y . How does the Possibility Principle aid fuzzy-set methodology by dealing with these cases?

Answer:

This geometric interpretation of the Possibility Principle offers a solution to an important problem that arises in fuzzy-set analysis. The problem involves what to do with cases that are near the origin (i.e., cases near the (0,0,0) corner). As Ragin notes (2000, 250–51), when testing whether variables are causally sufficient for an outcome, observations with a zero for all the independent variables

will always satisfy causal sufficiency and thus artificially inflate the number of cases where the theory works (this dilemma is the Raven Paradox). See also the exchange between Osherson and Smith (1981) and Zadeh (1982). The former is a classic in the cognitive psychology literature on categorization and Zadeh is the inventor of fuzzy-set logic.

336. Do Foran (1997) or Goodwin (2001) apply the Possibility Principle in their studies of (social) revolution?

Answer:

Foran's (1997) Boolean analysis of social revolution selects as negative cases only state-periods that have a positive value on at least one of his five major independent variables. Goodwin (2001) likewise selects as negative cases only state-periods where at least one key independent variable is present.

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