

Edgar Kiser, Howard T. Welser

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# The Microfoundations of Analytic Narratives

by Edgar Kiser *and* Howard T. Welser

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*Analytic Narratives* [Bates *et al.* 1998] makes a path-breaking contribution to historical methodology by combining formal theory and historical narrative. It includes both a general manifesto for their argument that rational choice models using extensive form game theory can be used to construct narratives of particular historical outcomes, and a series of substantive case studies showing how it works in practice.

Our interest is in the microfoundations of analytic narratives. The type of strategic game theory advocated and used in the book relies (with a few exceptions to be discussed below) on standard rational choice assumptions, actors are instrumentally rational, have full information, and are able to do the complex calculations required for backward induction in extensive form games. These assumptions underlying strategic game theory have often been criticized as unrealistic [Hechter 1992; Gintis 2000; Munck 2001], and not surprisingly, these criticisms have been applied to the analytic narratives project [Goldstone 1999, 533; Elster 2000, 692]. We argue that these criticisms are only partly valid – in some conditions, rational choice assumptions are quite reasonable, in others they are not – the important point is to be able to identify which conditions are present in any particular case. In other words, it is essential to be able to specify the scope of rational choice microfoundations, and thus the conditions in which strategic game theory will be useful in historical analysis.

The fact that strategic game theory is not useful in certain conditions does not mean that analytic narratives must then be abandoned. Other forms of game theory that rely on different microfoundations can be used in conditions in which standard

rational choice assumptions are not applicable.<sup>1</sup> Evolutionary game theory [Maynard Smith 1982; Gintis 2000; Mailath 1998] does not assume actors have either full information or the ability to do complex calculations. Actors in these models use trial and error, sometimes learn, and sometimes imitate others (in some forms, microfoundational assumptions are jettisoned entirely and selection mechanisms do all the causal work). In situations in which actors are not expected to have very good information or be able to do complex calculations, as when uncertainty and/or complexity are high, evolutionary game theory will be preferable to strategic game theory. Behavioral (sometimes called experimental) game theory [Camerer 1999; 2003] uses microfoundations developed in experimental economics and psychology [such as prospect theory [Kahneman and Tversky 1979] to broaden standard rational choice microfoundations. They incorporate both deviations from rationality due to the use of decision heuristics and emotions and deviations from the assumption of self interest such as a preference for fairness [Thaler 1991; Rabin 1998]. When these factors are important, behavioral game theory will be more useful than strategic game theory.

After specifying the abstract scope conditions of rational choice microfoundations in the next section, we analyze each chapter of *Analytic Narratives* to see if these conditions are present in their historical cases, and thus if strategic game theory is appropriate. We conclude with some general comments about the role of different types of game theory in historical analysis.

### **The Scope of Instrumental Rationality, When Are Standard Rational Choice Microfoundations Useful?**

Scope conditions are one of the most central, and most often neglected, aspects of the construction and testing of theory [Cohen 1989; Kiser 1996; Kiser and Hechter 1998]. Practically no sociologists believe that relationships in the social sciences are unconstrained universals; almost all agree that causal relationships are conditional universals, applicable in some conditions but not others. Scope statements refer to these conditions – the situations in which causal relationships, causal mechanisms, or theoretical assumptions are expected to be useful or operative. Rational Choice Theory is certainly no exception to the lack of universalism in the social sciences – it is what Coleman [1964] called a “sometimes true theory” because the microfoundations underlying it are only useful in some conditions – our goal is to say something about

<sup>1</sup> There are many differences between the types of game theory we discuss. Our goal is not to provide a complete discussion of these differences – we focus only on their use of different microfoundational assumptions.

when it will be true. We argue that three factors affect the scope of instrumental rationality, 1) the level of uncertainty and complexity; 2) the amount of costs and benefits involved; and 3) the type of actor making the decision.

### *Uncertainty and Complexity*

Uncertainty can be roughly defined as a lack of sufficient information about the range of possible alternatives (the choice set), the costs and benefits of each, or conditions affecting either of these. It has two main (often interacting) sources, 1) *objective uncertainty* due to incomplete information about features of the world relevant to the choice and 2) *subjective uncertainty* due to the cognitive limitations of the human brain [Simon 1957]. In situations of high uncertainty, people simply lack sufficient information or capacity to perform the calculations posited in the standard model of instrumental rationality.

Two of the main factors increasing objective uncertainty are 1) the uniqueness of the situation and 2) the presence of a strong strategic component. Unique situations always entail high uncertainty – when something has never happened before, and when it occurs outside of an institutionalized setting, it will be very difficult for actors to know (or even make reasonable guesses about) the range of possible choices or the likely costs and benefits of each. In cases like this, actors will either forgo instrumental calculations entirely, or, if they try to act instrumentally, their actions will often produce unintended consequences. For these reasons, rational choice models will have little analytical leverage in explaining actions in unique situations – they will be increasingly useful the more the same or similar situations are faced repeatedly. Substantively, this implies that rational choice theories will not be very useful in accounting for actions in revolutionary situations, or in other highly “unsettled times” [Swidler 1986; see also Sewell 1996 on the role of emotion during the French Revolution].

Since the actions of other individuals are often difficult to predict, uncertainty will also be high in strategic situations – when *ego's* best choice depends on the behavior of *alter* (especially when it depends on multiple, diverse, and unknown alters) [Elster 1989, 26-27]. This has important implications for the use of strategic (but not evolutionary) game theory in the social sciences. Although game theory has made significant contributions to our understanding of a wide variety of situations, it often relies on very strong assumptions about the information available to actors [Hechter 1992]. First, since it is difficult to anticipate the actions of others, and more difficult as the number of others increases. Games involving several players will thus have

higher uncertainty than those involving only 2 players. Second, long extensive form games assume that actors can calculate the actions of other players several moves in advance – that is a necessary condition for them to use backward induction to figure out what their moves should be. Since the odds of correctly predicting a sequence several moves by the other player requires us to multiply the probabilities of correctly predicting each move, problems can arise even when actors are very good at predicting specific moves. Suppose you can correctly predict the choice made by another player in one sequence of the game 80% of the time – if the game has four sequential moves, you will only be able to predict all four correctly about 36% of the time – your analysis based on backward induction will be wrong in almost 64% of the cases. In short, the lower the probability of correctly predicting the actions of another player (a function of prior knowledge of that player and the complexity of the choice situation) and the greater the number of players and of moves in the games, the less likely actors will be able to play according to rational choice assumptions. In cases like this, evolutionary game theory may be preferable to strategic game theory.

Strategic game theory has developed techniques to incorporate uncertainty [see Harsanyi 1967-68], but their utility is limited. The two most common strategies are inserting moves by “nature” and using “information sets.” Moves by nature allow the inclusion of one dimension of the structural context of the game at one point in time (for example, in Weingast’s case, whether economic times are good or bad). This is useful when there is a lot of uncertainty about only one thing. However, although more than one move by nature can be incorporated in a game, incorporating several becomes very cumbersome, so it is much less useful if uncertainty exists on many dimensions or at many different points in the game. Information sets also allow the inclusion of uncertainty about one thing at one point in the game – in this case, one player’s lack of information about a prior move made by another player. The limitations of this technique are similar to those for moves by nature. It works best when it is used sparingly, but is difficult to employ when uncertainty about prior moves is very common. Overall, strategic game theory is good at incorporating a little uncertainty, but not good at incorporating a lot. Therefore, in situations of high uncertainty, evolutionary game theory is usually preferable.

Processing and analyzing information is not only difficult when uncertainty is high, due to cognitive limitations it can also be problematic in conditions of perfect information if complexity is high. Given the cognitive limits that Simon [1957] stresses, complex decisions under risk probably have much in common with deci-

sions under uncertainty.<sup>2</sup> This is due not only to information overload, but also to fundamental difficulties with processing information. Kahneman and Tversky [1979] argue that decisions in situations of risk rely on a set of heuristics and biases that produce systematic deviations from standard instrumental rationality. Choices are still instrumental, but the calculative process is flawed or distorted, producing outcomes that differ from those predicted using the standard rational choice microfoundations underlying strategic game theory. Therefore, in situations of high complexity, behavioral game theory may be preferable to strategic game theory. Kahneman and Tversky and their collaborators have produced a very long list of common heuristics and biases in decision making, many of which have become the foundation for behavioral economics [Thaler 1991; Rabin 1998] and behavioral game theory [Camerer 1997].

### *Levels of Costs and Benefits*

The second main scope condition is also derived from the core of the theory – since models of instrumental rationality are based on weighing costs and benefits, they will not work well when the costs and benefits involved are very small [North 1981; Aldrich 1993; Chong 2000, 62-63].<sup>3</sup> In these situations, because the opportunity costs of failing to act instrumentally are low, people will be more likely to act on the basis of values [especially the types of values that are normally costly on instrumental grounds] [Chong 2000, 64] or emotions. Moreover, the stakes involved may also affect the extent of cognitive biases and errors. When experimental incentives for accuracy are high enough, wishful thinking decreases or disappears [Hastie 2001].

Perhaps the most important substantive consequence of this scope condition concerns attempts to explain voting behavior (voter turnout and the choices voters make between candidates) as instrumentally rational and based on material interests. The fact that this work has produced very weak results is often cited as evidence that rational choice theory has failed in political science [Green and Shapiro 1994; Boudon 2003]. We have a different interpretation – voting is outside the scope of theories based on instrumental rationality, since the costs and benefits of voting are

<sup>2</sup> Choices involving risk can be distinguished from choices under uncertainty by the fact that in that former (but not in the latter) it is possible to assign probabilities to different outcomes.

<sup>3</sup> Elster [1989, 26-27] posits a curvilinear relationship – he agrees that rational choice will not work well for small problems, but he thinks that it works better for medium sized problems (like buying a car or house) than for very large problems (which he does not clearly define).

so low. Rational choice scholars should simply admit that and stop trying to explain it [see also Brennan and Buchanan 1984].

### *Types of Actors*

The most common unit of analysis in rational choice arguments is the individual, and rational choice theories using collective actors are often criticized (see Elster [2000, 692-93] and Skocpol [2000, 673] for criticisms of *Analytic Narratives* along these lines). While this criticism is sometimes valid, we argue that rational choice assumptions will often be more valid for certain types of collective actors than for individuals.

Rational choice microfoundations will work better in explaining the behavior of categories and groups than individuals, and will work best in the context of organized collective actors like firms, political parties, and states. The difference between groups (or aggregates) and individuals is due to the fact that idiosyncratic preferences, values, and emotional influences will tend to cancel out in large groups [Stinchcombe 1968, 67-68; Hechter 1987, 31-33]. Since they are less idiosyncratic than most other micro-level assumptions, predictions based on rational choice microfoundations about aggregates or groups will often be more accurate than predictions about the behavior of particular individuals.<sup>4</sup>

There are many reasons to expect that formal organizations will be more rational than aggregates or individuals [Satz and Ferejohn 1996, 3]. First, formal organizations generally devote a lot of resources to the collection and processing of information (especially for decisions involving high stakes), thus mitigating the problem of the limited cognitive capacity of individuals. Second, unlike aggregates and informal groups, they often use formal systems of checks and balances and rules in an attempt to mitigate the problems associated with systematic as well as idiosyncratic biases in individual decision-making. As a result, deviations from rationality based on heuristics, idiosyncratic values, and emotions will be lower for organizations. Therefore, strategic game theory will be most useful in the analysis of formal organizations. Behavioral and evolutionary game theory will often be preferable for the analysis of informal groups, and especially individuals.

<sup>4</sup> This will not be the case if there are systematic (non-idiosyncratic) deviations from rationality [Thaler 1991, 96], or if the groups in questions are too heterogeneous. Crowds may also be less rational than individuals, due the heightened role of emotions [Durkheim 1965/1915].

## Microfoundations in Analytic Narratives

Now that we have specified the scope of rational choice microfoundations in the abstract, we can explore the extent to which they (and the strategic game theory models based on them) have been correctly applied in the historical analyses in *Analytic Narratives*. We will analyze the extent to which each case study uses (or should have used) alternative microfoundations, and how (if at all) they have been incorporated in the game theoretic models (in other words, are they part of the “analytic” part of the narrative or outside it?).

### *Greif on the Podesta in Genoa*

Greif’s chapter is about a group of clans (he focuses mostly on the two most prominent) that attempt to mitigate the resource dissipation due to frequent inter-clan conflict in the face of an external threat. They choose to cede power to a third-party enforcer, a podesta, who has enough power to keep the peace but not enough to take over himself. With one small exception (discussed below) he relies on standard rational choice microfoundations and extensive form strategic game theory.

Do the conditions in Greif’s case fit within the scope of rational choice theory? There is certainly some uncertainty in the situation Greif describes – the benefits of gaining new possessions may be difficult to quantify, the extent of external threat can only be estimated roughly, and the effects of a novel institution like the podesta may be difficult to predict. However, there was a lot of information available about each of these, since none were entirely unique – possessions had been gained and lost before, external threats had been faced, and the podesta had been used in several other cities. The level of uncertainty was moderate, not high. The stakes were clearly high, since possessions were very valuable and the costs of failing to deter or defeat an external threat could range from losing resources to losing their freedom or their lives. Finally, the clans were well organized, tight-knit groups, with long histories of collective action that shared information and collectively planned strategies. Contrary to arguments made by Elster [2000, 692-93] and Skocpol [2000, 673], we expect this type of corporate actor to be more rational than individuals. For all of these reasons, Greif is correct to rely on rational choice microfoundations.

Greif does implicitly explore the role of alternative microfoundations when he looks briefly at the possible effects of intermarriage between clans on maintaining cooperation. He notes that when they faced an external treat, the two main rival clans tried to enhance their ability to cooperate by both marrying into a third clan. Even if the concept of romantic love was not as developed as it is today, and these marriages



were formed mainly for political reasons, it is hard to imagine that they would not have injected some emotional component into inter-clan relations. However, Greif convincingly demonstrates that it is not necessary to explore the role of emotions in this case because the use of intermarriage did not in fact prevent conflict – when the external threat dissipated, civil war broke out in spite of the presence of multiple inter-clan marriage ties. Greif addresses the possibility that alternative microfoundations mattered, and then shows empirically that they do not account for the outcome of interest.

### *Rosenthal on War and Taxes in Early Modern France and England*

Rosenthal is interested in explaining both the development of fiscal institutions and the frequency of warfare in early modern states as a consequence of conflicts between monarchs and elites. French kings wanted to preserve their autonomy in international policy-making, and thus limited the development of legislative institutions controlled by elites with less bellicose interests. English kings were always more constrained by elites, and lost the battle for good when Parliament became dominant for good in 1688. Like Greif, Rosenthal uses a standard rational choice model and strategic game theory, but he too explores the role of alternative (in this case value-based) microfoundations and concludes that they are not necessary.

The basic features of Rosenthal's case seem to fit two of the three scope conditions for rational choice theory. Tax rates are clear to both parties, and although the outcome of wars is not, it is clear to both parties that the kings will profit from wars more than the elites [Kiser *et al.* 1995]. Uncertainty is further decreased by the fact that the same conflicts between monarchs and elites occur year after year. The stakes are clearly high for both kings and elites. The third criteria is perhaps more problematic. Kings are individuals, and as Weber [1968/1922] recognized, this often made their policies idiosyncratic and unpredictable. Elites were either categories (often tight-knit at the top levels but less so below) or organized corporate actors (in parts of France where Provincial Estates met and in England with Parliament). The third criterion indicates that standard rational choice microfoundations may not be sufficient to explain the choices of these actors.

The explanation of the French case goes fairly smoothly with rational choice assumptions. The one possible exception is the reign of Louis the XIV, whose desire for glory probably made him pursue more wars than a cost/benefit calculation would predict (Rosenthal [1998, 84] argues, probably correctly, that subsequent monarchs learned from this mistake). However, the English case is more complicated due to

the religious differences between kings and elites, as Rosenthal recognizes. Instead of attempting to construct a behavioral game theory model that incorporates religious preferences, Rosenthal discusses the role of religion separately. He [1998, 88-93] notes that religion probably had many relevant effects on variables in his model – on elite unity, on the increasing conflict between kings and elites, and on decisions about which countries to fight in wars – but he concludes that it was not a sufficient cause of any of these processes, and that adding religion would not change any of the basic conclusions derived from his model. He might be right about that, and in any case it would not be an easy task to use behavioral game theory and include religious preferences at each of those three levels. However, since he admits that religion was probably important, this seems to be a perfect case for future research on this topic to use behavioral game theory to provide a systematic test of how important it was relative to the factors stressed in Rosenthal's model.

### *Levi on Conscription*

Levi explains changes in institutions of conscription during the 1800s in France and the US.<sup>5</sup> The abolition of commutation, substitution and replacement (which allowed elites to evade military service) are explained as legislative responses to constituents growing distaste for these institutions. This distaste is explained primarily by the development of democratic ideology, government fairness implies relative equality of sacrifice [Levi 1998, 121].

Is this behavioral economic addition of norms of fairness to the model necessary to explain the abolition of forms of elite avoidance of military service? Uncertainty was moderate but not high in this case – military service was fairly frequent and different institutional regimes were used repeatedly, thus rough calculations of the likelihood of having to serve under different institutional regimes could be made. The stakes were very high – the effectiveness of armies determined whether states won or lost wars, and changes in the probability of serving could cost potential soldiers their lives. The actors are either highly organized corporate actors (states) or aggregates (not highly organized but likely to share information). In this type of situation, standard rational choice assumptions should be adequate, so we will explore the possibility that Levi's focus on norms of fairness is unnecessary.

<sup>5</sup> In Levi's discussion Prussia operates primarily as a reference case, where universal conscription was implemented very early as part of a general reorganization of Prussian society into a highly militaristic order.

The crux of Levi's argument turns on how commoners (low skilled workers, peasants, etc.) ranked their preferences for service institutions. Based on their material interests of avoiding service and maximizing compensation, the commoners prefer, all volunteer, replacement, universal conscription, and lastly commutation Levi [1998, 114]. She argues that growing norms of fairness explain why common folk shifted their preference for universal conscription above replacement, and this growth in democratic ideology explains why policy shifted after both the US and France experienced popular protests against institutions of elite evasion in the 1860's.

In contrast we suggest that resistance to elite evasion based on standard cost/benefit calculations can explain the timing of the abolition of commutation in the French and US cases. First, because preferences for service vary widely (some eagerly volunteer while others prefer imprisonment) the deeper a draft cuts into the population the higher the proportion of new recruits will be drawn from those who least want to serve. Sustained demand for new troops (in times of war) will progressively generate greater resistance to institutions of service because it exposes highly unwilling citizens to service. Second, the ordering of preferences should reflect the fact that any institution of elite evasion will increase the average probability that a commoner will have to serve, damaging their primary interest [Levi 1998, 131] recognizes this possibility in a footnote, but does not develop the argument). The fact that elite evasion increases the probability of commoners' service (increasingly so as militarization and rates of evasion increase) suggests that the proper ordering of preferences (on average for commoners) should be, volunteer, universal conscription, replacement, commutation. We will elaborate on the second point.

If service under draft is random (through a lottery) then all able bodied men face the same probability of serving; that is a probability equal to the proportion of the men needed under arms. Systems of elite evasion actively damage the primary interest of non-elites by increasing the probability (on average) that they will have to serve. This results from the inescapable mathematics of musical chairs [Schelling 1978]: given a finite population of potential soldiers, the larger the proportion that evade the higher the probability that those who cannot evade will be chosen to serve.

In principle, any increase in the probability of service will damage a commoner's interests. However, awareness of this degradation of interests should have been most pronounced when militarization and elite evasion were both high. For example, as Table 1 shows, with 40 percent under arms, evasion by the 20% elite means that non-elites' probability of serving jumps from 40% to 50%. When demand for troops is high, and many elites can avoid service, non-elites suffer major degradation of their primary interest.

TAB. 1. Average probability that a commoner will serve, depending on the percent under arms and the percent able to avoid service due to elite privilege

Under Arms	Conscription	10% Elite	20% Elite	40% Elite
Percent	Universal	Replacement or Commutation		
10	0.10	0.11	0.13	0.17
20	0.20	0.22	0.25	0.33
30	0.30	0.33	0.38	0.50
40	0.40	0.44	0.50	0.67
50	0.50	0.56	0.63	0.83
60	0.60	0.67	0.75	1.00

If deep cuts into the preference distribution and the “squeezing” of non-elites explain the timing of the abolition of institutions of elite service avoidance then institutional change in the US and France should have occurred after peaks in the demand for troops. To explore this thesis we calculated militarization rates (army size/population able to serve) for the three cases and compared the timing of peak militarization to legislative change.

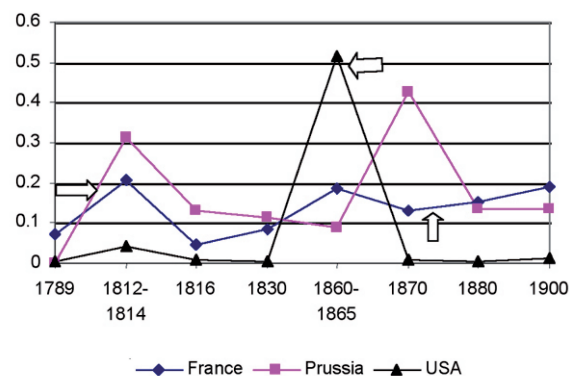


FIG. 1. Militarization relative to proportion population male and age 15-39 and legislative change.

Sources: Population trend data from McEvedy [1979]; France and Prussia military size from Rasler and Thompson [1989]; US from Jessup and Ketz [1994]; proportion male between 15 and 39 [18.2%] based on data reported in the 1860 US Census.

Note: This figure doubles the base rate of militarization in order to more accurately reflect peak demand during periods of warfare [Chambers *et al.* 1999]. Further research should represent peak demand through models that use annual military size data, casualties, injuries and other short term factors what would alter cumulative demand for new troops.

As figure 1 shows, for both US and France a peak of militarization around 1860 precedes the legislative changes (indicated with arrows on the respective trendline). The response of the US was much more immediate, which is consistent with the

possibility that intense negative reactions (draft riots) are related to the combination of commutation and higher rates of militarization. In the US case, the average rates of militarization translate into significant detriments to commoners' primary interest, especially when elite avoidance is common. Levi suggests that evasion was widespread in France (replacements constituted 20-25% of the troops for France during the period, and under various regimes access to evasion was extended to broad classes of citizens). While substitution was common in rural US, commutation was common in cities where draft riots occurred and popular discontent was high. The negative sentiment expressed towards commutation can plausibly be explained as popular reaction to an institution that damaged commoners interests by increasing the probability that they would be forced to serve.

Although norms of fairness and democratic ideology were present in both France and the US during the 1860's a more parsimonious explanation of popular sentiment derives from standard rational choice assumptions and commoners interest in avoiding service. Thus there is no need to assume a democratic inspired shift in preferences to explain a shift in resistance, because resistance should have increased with demands for service and those increased demands closely preceded the observed changes.

### *Weingast on the Balance Rule and the Civil War*

Weingast explains the development and eventual demise of a sectional equilibrium between slave and free states prior to the U.S. Civil War maintained by political parties in the senate. The "balance rule" they created dictated that the number of free states and slave states would be kept equal by only admitting a new free state to the union when a new slave state was admitted as well. This provided both parties veto power, allowing slave states to maintain that institution. The maintenance of the balance rule prevented conflict over slavery, and its breakdown resulted in the Civil War.

Weingast's case fits clearly within the scope conditions of rational choice theory, thus his use of strategic game theory is appropriate. Uncertainty is fairly low – legislators are involved in repeated interactions and devise a strategy to avoid very costly conflict. There is even strong empirical evidence that they were fully aware of the consequences of their actions – they talk about their system as maintaining a "sectional equilibrium" [Weingast 1998, 177]. The stakes are clearly very high; maintaining the existing mode of production and preventing a civil war. The main actors are political parties, highly organized corporate actors. For all of these reasons, standard rational choice assumptions should work well.

Weingast does address the role of values at one point, but they are not incorporated into his game theoretic model. He notes that one of the important background factors necessary for the model to work is the value Americans place on limited national government (thus similar dynamics would not be expected in the European context). Values probably play this “background” role in many rational choice analyses, and making that explicit has the virtue of more clearly defining the scope of the argument.

Elster [2000, 692] criticizes Weingast for not addressing the “emotional charge” of the slavery issue. However, while it is clearly true that slavery was an emotionally charged issue, Elster provides no argument or evidence about how including emotions would change the model, and it seems clear from Weingast’s account that emotions do not prevent either party from acting instrumentally and strategically. Ultimately, this argument cannot be settled by assertion, but only by comparing a behavioral game theory model incorporating emotions to Weingast’s model.

### *Bates on the International Coffee Organization*

The case Bates studies is the rise and fall of a cartel – the International Coffee Organization (ICO). The organization was formed in 1962 and controlled about 90% of the world’s total coffee production. Using a series of models, Bates shows how it survived and expanded until its demise in 1989.

Bates sticks with standard rational choice assumptions and uses a series of “off the shelf” strategic game theory models.<sup>6</sup> The basic features of his case support this choice. Since the coffee producers interact repeatedly and prices are public knowledge, uncertainty is fairly low (there is of course some uncertainty about future prices due to the way in which weather patterns affect supply). Since the major producers in the coffee industry are large organizations with large budgets and (potential) profits, the stakes are very high. Finally, the main actors are highly organized corporate actors, firms and states.

Although Bates does not discuss deviations from rationality or full information, he does explore the possibility that the utility functions of actors include more than economic interests. This issue is raised by the entry of a consumer nation, the United

<sup>6</sup> One of the guidelines suggested by the Analytic Narratives group [Bates *et al.* 2000a, 693] is to avoid the use of off the shelf models if possible. While we agree that it is often useful to construct unique models for particular cases in order to model as many of the nuances of the case as possible, there are other factors that make off the shelf models preferable. Using off the shelf models makes analytic narratives less susceptible to the charge of curve fitting, and also aids in generalizing results and cumulating knowledge by showing connections between different cases.

States, into the cartel. Why would a consumer nation want to maintain high prices for a product it buys? One possible answer Bates [1998, 205-07] suggests is that the United States (at this point modeled as a corporate actor) had “political preferences” that became more important than their economic interests as a consumer of coffee. Cold War politics may have driven their decision to join the ICO – the threat of communism gave them a strong interest in bolstering the coffee economies of their Latin American allies.

However, Bates concludes that this broadening of the utility function to include political interests does not fit the data, because the U.S. congress first defeated the treaty agreement to join the ICO before eventually passing it.<sup>7</sup> He argues that the demise of the ICO was due to both economic and political factors (the decline of the communist threat). In a manner very similar to Rosenthal’s argument about the effects of religion on Early Modern English politics, Bates sees the political interests of the U.S. as a contributing factor but not the main cause.

## Conclusion

The case studies in *Analytic Narratives* (with exception of Levi’s focus on norms of fairness) generally rely on standard rational choice microfoundations and extensive form strategic game theory. To their credit, all of them explore the possibility that alternative microfoundational assumptions might be useful. However, because they usually conclude that these alternative assumptions play either a background or secondary role, they do not include them in their game theoretic models (Levi, who does use alternative microfoundations, does not use game theory). The cases they have chosen fit well within the scope of rational choice, so their use of standard strategic game theory is justified. It would be interesting, however, to use behavioral game theory to look at the role of religion in Rosenthal’s case and the role of emotions in Weingast’s case. In fact, *Analytic Narratives* may go too far toward incorporating alternative microfoundations – our reanalysis of Levi’s case suggests that the inclusion of norms of fairness may not have been necessary to account for the timing of the abolition of institutions allowing elites to avoid military service (although more research would be necessary to prove this point).

The fact that strategic game theory using standard rational choice assumptions works well for the cases in this book does not mean that it will be applicable to all

<sup>7</sup> This disagreement between the executive branch that wanted the treaty and the legislative branch that initially did not causes him to relax his assumption that the state was a unitary actor and explore domestic politics.

problems of interest to historical sociologists. What it does mean is that the authors of this book chose their cases well, knowing the types of problems that would best illustrate the strengths of their model. There are many types of cases for which Analytic Narratives (at least as shown in this book) will be less useful. Two important scope limitations should be noted.

First, the game theoretic models used in *Analytic Narratives* theorize strategic interaction, not the structural conditions within which this interaction takes place. In some sense, this is the exact opposite of most historical sociology [for example, Moore 1966; Wallerstein 1974; Skocpol 1979; Goldstone 1991] which theorizes the relationships between macro-level structural variables, leaving the narrative of the interactions that tie them together relatively unstructured and under-theorized (in other words, not very “analytic”). Analytic Narratives gain precision in modeling interactions but at the cost of leaving changes in structural factors exogenous, coming in as random moves by “nature” (in other words, their treatment of structural changes is not very “analytic”). In addition to suggesting that a synthesis of these two approaches might be productive, this illustrates an important scope condition for the use of Analytic Narratives, they will work best when most of the causal action is found in strategic interactions, and will be much less useful when most of the causal story is about changes in structural factors within which interaction takes place.

Second, and the focus of this paper, Analytic Narratives using strategic game theory will be most useful when the scope conditions for the use of rational choice microfoundations are met. When uncertainty is high (for example in revolutionary situations or in the immediate aftermath of revolutions), when the stakes are low (for example, when large numbers of individuals are voting), or when the main actors are individuals (for example, much of the work on ordinary people in the new social history), strategic game theory will not be very useful because actors either will not be able to make the necessary calculations or will not care enough about the outcome to make the effort necessary to do so. In these cases, narratives can still be analytic, but they should rely more on evolutionary or behavioral forms of game theory.

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## The Microfoundations of Analytic Narratives

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Abstract: The Analytic Narratives project is based mainly on the use of strategic game theory to analyze particular historical outcomes. Strategic game theory relies on a strong version of standard rational choice assumptions – actors are assumed to be instrumentally rational, have complete information, and have the ability to do complex calculations such as backward induction over several moves. We argue that strategic game theory is useful for some but not all historical analysis, because in some cases these micro-level assumptions are unrealistic. When rational choice assumptions are unrealistic, we suggest that scholars should use types of game theory that relax these assumptions, such as evolutionary game theory and behavioral game theory. Our goal is to broaden the Analytic Narratives project by outlining the conditions under which each of these three different types of game theory will be most useful by specifying the scope conditions of rational choice assumptions.

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*Keywords: game theory, history, narrative, microfoundations, evolution.*

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**Edgar Kiser** is professor of sociology at the University of Washington. He has published articles in sociology, political science, and economics journals on topics including the determinants of war and revolt, the development and decline of voting institutions, the centralization and bureaucratization of state administration, and the methodology of historical sociology.

**Howard T. Welser** is an Assistant Professor of Sociology at Ohio University. He investigates how micro-level processes generate collective outcomes in contemporary and historical populations. Recent projects include “Cultural Evolution, Disproportionate Prior Exposure and the Problem of Cooperation” (*Rationality and Society*) and “Visualizing the Signatures of Social Roles in Online Discussion Groups” (*Journal of Social Structure*). Currently he is focusing on how network structure and reference groups influence retention, contribution, and diffusion in computer mediated social spaces.

Please direct all correspondence to Edgar Kiser: [kiser@u.washington.edu](mailto:kiser@u.washington.edu).