

Strategy in History and (versus?) in Economics:
A Review of Lawrence Freedman's *Strategy: A History*

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1 A Dialog

Ask an economist or a game theorist to define strategy, and the answer will be simple and succinct: “A complete contingent plan of action,” or “A function that maps information sets to actions.” For Lawrence Freedman, matters are far more complex. He offers dozens of quasi-definitions. His short definition is “the art of creating power” (p. xi); this “has the advantage of allowing the impact of strategy to be measured as the difference between the outcome anticipated by reference to the prevailing balance of power and the actual outcome after the application of strategy” (pp. 607–8).² Strategic behavior “emerged out of social structures that invited conflict, recognized the distinctive attributes of potential opponents or allies, displayed sufficient empathy to find ways to influence their actions, and were able to prevail through deception or coalition as well as brute force” (p. 607). Many of his definitions are variants on “attempts to think about actions in advance, in the light of our goals and our capacities” (p. x), with the addition that strategy is “fluid and flexible, governed by the starting point and not the end point” (p. xi).

He heads the preface with a memorable quote from Mike Tyson: “Everyone has a plan till they get punched in the mouth.” Later he quotes another fighter, the legendary German Field Marshal Helmuth Karl Bernhard Graf von Moltke: “no plan survived contact with the enemy” (p. 104). The game theorist will respond: “Those plans are not strategies. They

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²For brevity, I will cite chapter or page references in Freedman's book without constantly repeating Freedman (2013).

are incomplete. They fail to specify any action at the node of the game tree where you get punched in the mouth or meet the enemy army, or in the ensuing subgame.” It would be extreme stupidity, or arrogance tantamount to stupidity, for a boxer not to recognize the possibility of getting punched in the mouth. And although avoiding battle may be an important aspect of military strategy in many situations (see pp. 47–9), every plan should include a provision for action if or when battle commences. Tyson, or Freedman, will probably counter that even if the boxer starts with a complete plan that specifies the action for this contingency, the punch will make him forget the plan and react hot-headedly. Modern game theorists exposed to behavioral ideas will admit some truth in this, and agree that the boxer’s System 2 calculations are likely to fly out of the ring when the punch lands and System 1 instincts will take over. But they will add that that makes it all the more important for the boxer to strategize better in advance—to take actions before getting punched, either to reduce the risk, or to arrange matters in such a way that the anger and instinct (or the prospects of such reactions) are put to more effective use, as with the strategy of brinkmanship. More generally, “the art of creating power” often entails strategic moves like commitments, threats and promises that game theorists have analyzed following Thomas Schelling (1960). And Freedman’s picture of “strategy as a System 2 process engaged in a tussle with System 1 thinking” (p. 605) looks remarkably like Schelling’s (1984, ch. 3) “intimate contest for self-command.”

I have a twofold purpose in constructing the above exchange. One is to highlight the difference between the perspectives of economists and historians in thinking about the same situation. The second is to argue that each has something to learn from the other, and a fuller understanding can result from their dialog. The two perspectives share a lot of middle ground, and have useful complementarities.

Freedman’s book is an amazingly rich and beautifully readable collection of events, people, and ideas through the long history of strategic interactions in war, politics, business, and other contexts. Economists and game theorists can learn a lot and broaden their horizons by reading it. Freedman has good perceptive comments on many of the events, people, and ideas he outlines. But he is largely content to let the stories speak for themselves; they are

almost “thick descriptions” of the kind pioneered by Clifford Geertz in anthropology and now prevalent in sociology and some other fields. Economists like to find themes and patterns that are common to many situations, so they can develop more general theories that will help them understand and explain other and new situations. I believe I am justified in thinking that Freedman is skeptical, if not outright disapproving, of such theorizing. In this review I hope to contribute to the dialog, and in the process hope to show that the historian can derive some benefit in exchange from the economist’s and game theorist’s way of thinking.

2 A Quick Overview

Let us begin with a brief tour through the book, with my thoughts on some parts as we go along.

Freedman begins at the beginning, with evolution. This chapter is tangential to the rest of the book, which is about consciously designed strategies. It is also disappointing, covering mostly the earliest field research and ideas in the subject. It has seen huge advances since the work of Frank de Waal and Jane Goodall, and has yielded important insights on strategies of signaling and emergence of cooperation that connect well with some of Freedman’s later chapters. See, for example Ridley (1996) for a popular exposition, Maynard Smith (1982) and Maynard Smith and Harper (2003) for intermediate-level treatments, and Alger and Weibull (2013) for a recent theoretical model. The book is already long, to be sure, but some discussion of this research and the connections, perhaps in an additional later chapter, would have been valuable.

Chapter 2 is about biblical games, and Chapter 5 about satan. I am admittedly an atheist ill-qualified to comment, but for me this is another disappointment. In these games god can and does intervene at will and overrides everyone else, so the only relevant strategy is to please god. How do you please god? God knows! This is not of much practical use. Tom Lehrer made the point perfectly in his song about nuclear proliferation: “The Lord’s our shepherd, says the psalm / But just in case, we’re gonna get the bomb.”

Freedman’s account of David and Goliath—“David had God on his side” (p. 19)—differs from Malcolm Gladwell’s (2013)—David was a highly skilled slinger, and he got his strategic advantage by breaking the prevailing code of close-quarters, hand-to-hand fighting, thus taking Goliath by surprise.³ I find Gladwell more convincing.

For me the book really gets going with the chapter on the Greeks. Freedman dwells at length on the distinction they made between *biē* and *mētis*. *Biē* is pure strength, exemplified by Achilles.⁴ *Mētis*, exemplified by Odysseus, “described a particular notion of strategic intelligence” that game theorists will recognize: “capacity to think ahead, attend to detail, grasp how others think and behave ... it could also convey deception and trickery ... moral ambivalence” (p. 23) or cunning. This was “deplored for a lack of honor and nobility” (p. 23) and Dante placed Odysseus in his eighth circle of hell (p. 25). But *mētis* finds echoes and even approval in Sun Tzu and Machiavelli (ch. 4). Of course, “reliance on deception was apt to suffer diminishing returns as opponents came to appreciate what they were facing” (p. 23). As we would say, “fool me once, shame on you; fool me twice, shame on me.” More on this in the next section.

Later (p. 43), Freedman relates the *biē*–*mētis* distinction to one between strategy and stratagem, the latter comprising skill and cleverness. But strategy should encompass stratagem. As Yogi Berra would say, 75% of strategy is mental, the other half is physical. According to Freedman, “*mētis* was of most value when matters were fluid, fast-moving, unfamiliar and uncertain. ... There was no reason, however, why the same qualities could not come into play when there was time to be more deliberate and calculating” (p. 29). In other words, the deliberate calculation of *mētis* should include the possibility of using *biē*. To *biē*, or not to *biē*; that is the question. Thus *mētis* fits with both the game theorist’s and Freedman’s views of strategy. Indeed, it seems to fit particularly well with Williamson’s (1985, pp. 47–9) notion of *opportunism*, namely “self-interest seeking with guile.” We would neither praise

³Gladwell also argues that Goliath probably suffered from acromegaly (caused by a non-cancerous tumor of the pituitary gland), one effect of which is very poor eyesight. But it is doubtful whether David knew this when he chose his strategy.

⁴But Caroline Alexander (2009) offers a different ‘pacifist’ take on the story and character of Achilles.

such behavior per se nor deplore it for lack of honor; we would regard it as just another fact of strategic life that other players must reckon with.

The other important part of the chapter on Greeks is about the Peloponnesian War and Thucydides. For Freedman, Pericles' "speeches were strategic scripts, offering a satisfactory way forward that reflected his grasp of what might be possible in the light of the forces at work in the world. ... But actuality in the end proves unmanageable" (p. 37). This continues Freedman's theme of fluidity and flexibility in strategy. I will return to this point in Section 5.

Part II (chs. 6-17) is about military strategy. Or rather, interspersed with brief accounts of major wars over the last two hundred years or so, it is about the ideas of strategists of war. Each of these was a proponent of one particular strategy. Different ones favored different strategies leading to dichotomies: attacking the enemy's strongest flank versus indirect approaches probing the enemy's weak points, battle of annihilation versus battle of exhaustion, attacking the enemy's army versus attacking the brain center at the headquarters, and so on.

For me, Clausewitz stands out among the early experts for recognition of an essential point: "In war, the will is directed at an animate object that reacts" (p. 82). It is amazing how this Lesson 1, which makes strategy in game theory different from that in one-person decision theory, is forgotten by supposed experts in a game-theoretic context of utmost importance; for example, the German general staff's plans in World War I "paid insufficient attention to what France might do to disrupt these plans" (p. 135). I will comment on this fundamental flaw in Section 3. Clausewitz also recognized the point about fluidity and flexibility of real-life strategic situations that Freedman emphasizes, but for him "[t]he correct approach was not to give up and assume that chaos and unpredictability would mock all plans and overwhelm the best efforts but rather to prepare for such eventualities in advance" (p. 88). I will discuss this further in Section 5.

Finally, Clausewitz recognized that even a seemingly decisive battle was seldom the end of the story. "A defeated enemy might rise again. ... As victory might be temporary ... it might be prudent to negotiate a settlement under more favorable terms when the optimum

position has been reached” (p. 93). This is true in real-life games more generally: every game is embedded within a bigger game, and a seemingly winning strategy in this game may be bad for the larger game. The more game theory I learn and understand, the better I realize that what your mother told you was “the right thing to do” is often also the best self-interested strategy for the long run and for the bigger game.

Five chapters in this part are about military strategy in recent times: nuclear deterrence, guerrilla warfare, and the so-called “revolution in military affairs” or RMA. As this review is directed to fellow-economists, I will say almost nothing about these aspects except for occasional incidental remarks below.

Part III, titled “Strategy from Below,” is the longest part of the book, comprising ten chapters and covering 210 pages—longer even than the 176-page Part II about military strategy, which is Freedman’s main area of scholarship. In one sense this amount of space is well merited: “underdog strategies, in situations where the starting balance of power would predict defeat, provide the real tests of creativity” (p. xii). Similarly, Michael Chwe (2013, p. 29) says that devising good strategies is far more important for the underdogs and the powerless of this world than for the elite and the powerful. Gladwell (2013) also develops this theme using some telling examples. Unfortunately in my judgment, Freedman devotes far too much space to abstruse and mistaken arguments of, and debates among, 19th and early 20th century revolutionaries: Gottschalk, Bakunin, Marx, If you think economic theorists make unrealistic assumptions, you should read the views of the world held by these people who were so engaged in real, vital social and political debates and so desperately wanted to change their world. Their expectations of what support their strategies would generate, and what the masses could achieve, proved to be totally mistaken most of the time. Even when the Soviet revolution triumphed, it was under totally different circumstances and in a totally different way than the theories of Marx and others had predicted.

No, the true earliest insight about strategy in revolution and socialism came from the light and fluffy Anglo-American humorist P. G. Wodehouse (1909). His schoolboy character Psmith told a new classmate Mike: “You won’t mind my calling you Comrade, will you? I’ve just become a socialist. It’s a great scheme. You ought to be one. You work for the equal

distribution of property, and start by collaring all you can and sitting on it.” This was almost fifty years before Milovan Djilas discovered the “new class” of the Soviet nomenclatura.

Freedman’s analysis of strategies of Mahatma Gandhi and Martin Luther King is much more interesting; I will discuss this in some detail in Section 7.

Part IV, labeled “Strategy from Above,” is about business strategies. Writing and consulting about strategy in business has itself become a huge business. Freedman does an excellent job of separating the wheat from the chaff, and the scholars from the gurus—“guru was used because ‘charlatan’ is too long to fit into a headline” (p. 548)—each offering “hints of unique keys to success that could be accessed by buying the book, attending the seminar, or—best of all—signing the consultancy contract” (p. 561). However, I think Freedman gets only a partial and misleading perspective by thinking of business strategy as coming “from above.” Of course the top management makes plans. But how those work out depends on strategies and tactics deployed by the underdogs in firms—the Dilberts of this world. Good strategy by management needs to recognize this and take into account the constraints on information and action it implies, in other words to engage in good mechanism design.

Part V is about the conceptual basis of theories of strategy, and in particular about rational choice theory and the alternatives. Freedman is clearly in favor of the latter. His account in Chapter 37 of recent psychological and neurological research and its implications for strategy is excellent, and worth reading even for economists who are interested solely in decision theory rather than game theory. But I think that the contrast is overdrawn; System 1 and System 2 are often complements and not alternatives. More on this in Section 4.

In the final chapter, Freedman develops his ideas about stories and scripts and their role in strategy. He declares a theme of his book to be “the growing importance of stories as a means of thinking about and communicating strategy” (p. xv). A script is “a coherent sequence of events that an individual could reasonably expect” in a particular circumstance, “whether as a participant or an observer” (p. 599). Scripts set the normal expectations of players in a game of strategy, and their interpretation of the actions of other players. Thus scripts include some combination of players’ theories about the world that enter into their

System 2 calculations, and the heuristics that form their System 1 actions. I will return to these issues in Section 6.

I will conclude this section with some general criticisms. First, although Freedman gives his assessment of specific strategies at several points, I wish he had explicitly and consistently followed up on his idea that “the impact of strategy [can] be measured as the difference between the outcome anticipated by reference to the prevailing balance of power and the actual outcome after the application of strategy” (pp. 607–8).

Next, in its treatment of relatively recent politics and business, the book is too U.S.-centric. To give just one example, in Chapter 27 where Freedman discusses the use of language to define a political “party and its principles in ways that were emotionally compelling” (p. 435), I wish he had remembered Tony Blair’s brilliant slogan for the British Labour Party in 1997, designed to appeal to both right and left: “Tough on crime, tough on [the societal] causes of crime.” In the same chapter he discusses links between religion and politics in the U.S., leaving out even more important connections of this kind in India, Ireland, and Israel.

Finally, when Freedman discusses strategies from below, asymmetric conflicts, terrorism etc., it would have been nice to have his views on the events leading to the break-up of the Soviet empire, the Arab Spring, and the Israeli-Palestinian conflict. Political strategies in different types of democracies—differences between presidential and parliamentary systems, and between plurality and proportional representation systems—deserve a mention.

3 Value of Thinking Like An Economist

Discussing *The Art of War* by the 19th century French writer Antoine Henri de Jomini, Freedman remarks that the book “was published widely. This meant that opposing armies might well have been following the same precepts, and so the advice would become self-neutralizing” (p. 84). Similarly, Sun Tzu’s “key to deception was simply a matter of doing the opposite of what was expected”; this “worked best when followed by only one side. If both commanders were reading Sun Tzu ...” (p. 45). A 20th century British strategist of

war, Basil Liddell Hart, no doubt influenced by the futility of direct assaults on entrenched enemy positions in World War I, advocated the indirect approach. As Freedman says, that “raised the question of how matters would be resolved if both sides were following an indirect approach” (p. 138). The American scholar and defense expert Edward Luttwak also favored the strategy of “follow[ing] the line of least expectation,” but Freedman points out that “enemies would be alert for the unexpected” (p. 211). Henry Ford’s strategy—achieving high volume, low cost, and low price with a single car model—worked only so long as others didn’t counter with price-quality combinations that had more appeal to consumers. But in laboratory experiments, individuals who “were not naturally strategic ... could appreciate ... that sticking to an established pattern of behavior just because it worked in the past would probably not work in the future because a clever opponent would know what to expect” (p. 605).

I lost count of the number of times in the book Freedman has to point out this obvious flaw in strategic advice offered by renowned experts and strategy choices of highly practical people. All of them would have done well to acquire a mode of thinking that is second nature to economists. For lack of a better phrase, I will call it *equilibrium thinking*. Any economist analyzing a situation and thinking about the best action for one of the parties in that situation asks instinctively whether that action will remain best when everyone else in that situation is responding or making similar choices. The answer may be yes, as with prisoners’ dilemmas. In other contexts the answer may be no; it may be better to be a contrarian. In either case, it is important to ask the question and think it through.

I don’t mean that every system is always in or close to equilibrium, nor that people facing such situations always think them through to the equilibrium level, nor that one should not take advantage of any disequilibrium actions one is confident the other parties will take for whatever reason. There is a well-developed topic in game theory that goes under the name of “level- k thinking,” where level 0 is a hypothetical strategically naïve choice, level 1 assumes that others are level-0 players and chooses the best response to that, level 2 chooses the best response to level-1 choices, and so on. (See e.g. Crawford, Costa-Gomes and Iriberri, 2013) Experimental evidence shows that considerable experience of playing the game is needed

to progress beyond levels 2 or 3. But the supposedly experienced experts in military and business fields that Freedman discusses seem stuck at level 1. They pronounce nostrums about strategies that fail to survive the test of being confronted by other active strategic players. The same applies to very general vague schemata like the “OODA loop” (pp. 196–8). This iterated sequence of observation, orientation, decision and action became quite a fad in U.S. military thinking in the 1960s and later, and Freedman appears generally approving of it. Part of this approach involved disorienting the opponents by working inside their OODA loops. But what if the opponents are already successfully operating inside yours, disorienting you, with the result that what your “OO” shows you is not reality but *The Matrix* come to the battlefield?

There are other places in the book where ideas of economists are very relevant. Weber’s assertion that the civil servant “must execute conscientiously the order of superior authorities, exactly as if the order agreed with his own conviction” (p. 305) will draw both hollow laughs of mirth and groans from anyone familiar with these organizations. Fans of the British TV comedy series *Yes, Minister* and *Yes, Prime Minister* will remember numerous occasions when Sir Humphrey Appleby paid lip service to Weberian ideals while circumventing his political master’s intentions. An economist will recognize this as a principal-agent problem from a mile off, and will ask whether there are feasible mechanisms (incentive schemes) that bring Sir Humphrey closer to Weber. Management—“more than administration but less than total control” (p. 461)—is another agency problem, and indeed has been extensively studied as such by economists for a long time.

The sociologist Robert Merton in 1936 pointed out a fundamental problem for any prediction of a social system: “public predictions of future social developments are frequently not sustained precisely because the prediction has become a new element in the concrete situation, thus tending to change the initial course of developments” (p. 319). This has been the staple of macroeconomic policy analysis for the last forty years, and economists know the problem and the feasible solution better than most other social scientists.

4 Dichotomies

Freedman repeatedly emphasizes that strategy “is governed by the starting point and not the end point” (pp. xi, 606, 611, and in other places). To an economist, or indeed to anyone thinking about decisions or games, this is a wrong distinction. The end-point is about the objective function; the starting point comprises one of the constraints. Both the objective function and the constraints are important parts of the problem of finding an optimal strategy. Neither can be said to govern. And in any case, whether in game theory or one-person decision theory, “the end point” is not a fixed goal, failure to attain which will discredit the theory, but itself an object of choice bearing in mind various trade-offs.

This is just one of numerous dichotomies about strategies, and in thinking about strategies, that appear in the book: military strategies of battles of annihilation versus battles of exhaustion (ch. 9), direct versus indirect approaches (ch. 11), making versus implementing strategies (pp. 99–100, and frequently in chs. 30–33) and so on, and at a conceptual level the *biē-mētis* distinction (ch. 3), rationality versus irrationality (chs. 36–7), and so on.

Such dichotomies have their uses. They highlight extreme or pure cases that can be comprehended and remembered more easily. And, as an honest confession from one scholar to others in the same game, it helps us highlight our own contributions by drawing a sharp contrast with what went before. However, it is important to recognize that reality is usually some combination of pure cases, or lies at some intermediate point between the spectrum spanned by the pure cases. Gould (1987, pp. 8–9, 199–200) expresses the tension and the balance very well:

Any scholar immersed in the details of an intricate problem will tell you that its richness cannot be abstracted as a dichotomy, a conflict between two opposing interpretations. Yet ... the human mind loves to dichotomize. ... All dichotomies are simplifications, but the rendition of a conflict along different axes of several orthogonal dichotomies might provide an amplitude of proper intellectual space without forcing us to forgo our most comforting tool of thought. ... Dichotomies are useful or misleading, not true or false. They are simplifying models for

organizing thought, not ways of the world. ... They do not blend, but dwell together in tension and fruitful interaction.

With this background, here are a some dichotomies in Freedman's book that strike me as less than helpful, where a blending is more appropriate than a conflict.

One dichotomy which Freedman often mentions, and which has become very popular these days, is that between System 1 and System 2 in thinking and decision-making. For Freedman, strategy is "a System 2 process engaged in a *tussle* with System 1 thinking" (p. 605, emphasis added). It has become conventional wisdom that most decision-making is an instinctive System 1 process, with only occasional checks or inputs from the calculating System 2. I believe the connections between the two are much closer; the two are more complements than substitutes. To quote just one example, an ice hockey goaltender's actions appear as close to pure reflex as anyone can imagine, but few outsiders realize how much conscious calculation goes into them (Koentges (2014), p. 58):

To the casual observer, it looks like the goalie is at the mercy of those attacking, but elite goaltenders turn the hunter into the hunted. They know every skater's tendencies and adapt accordingly—showing an extra quarter inch of the top corner the way a burlesque dancer will reveal thigh; tricking puck holders into passing when they should shoot; sometimes even forcing a player to hesitate and over think so that no scoring chance remains. Kiprusoff was a master at these stratagems. His best saves may have been pure reflex, but he also frequently knew what was coming, because he had engineered it."

So Systems 1 and 2 need not constitute a dichotomy at all. They are not necessarily in a tussle, they can reinforce each other, and both are important aspects of strategy. The goalie's System 2 calculates and devises strategies to change the game so as to make things easier and more effective for System 1; Schelling would call these devices strategic moves.

Other dichotomies are similarly questionable. One particularly worth comment is the distinction between formulation and implementation of strategy. The former is meaningless without attention to the latter, and it is amazing that anyone would have thought otherwise.

Perhaps the distinction between strategy and tactics, and more generally the multi-tier framework of grand strategy, strategy, grand tactics and tactics, led to regarding them as separable decisions:

At the level of grand strategy, a conflict was anticipated, alliances forged, economies geared, people braced, resources allocated, and military roles defined. At the level of strategy, the political objectives were turned into military goals; priorities and specific objectives were agreed upon and allocations of men and equipment made accordingly. At the level of grand tactics or operations, judgments were made as to the most appropriate form of warfare to achieve the goals of that particular campaign in the light of the prevailing conditions . At the level of tactics, military units attempted to push forward the goals of the campaign in the specific circumstances in which they found themselves. (p. 206)

But plenty of traffic goes across these levels in both directions. Decision-makers at higher levels must recognize that constraints coming from lower levels may make their desired actions infeasible. While formulation usually pays attention to constraints imposed by resource availability and technological capabilities, those pertaining to information and incentives will affect implementation, and the formulation should take them into account from the outset. Economic theorists have recognized this for almost fifty years or longer in their research on mechanism design and related topics; surely practical planners in military and business contexts should have known it far longer and designed their plans accordingly.

5 Fluid and Flexible

For Freedman, fluidity and flexibility appears to be the most important aspect of strategy. He mentions and emphasizes it repeatedly. He recounts with evident glee the occasions when rigid plans went awry, and repeats and summarizes some of the most important instances of this (p. 608):

The various strands of literature examined in this book all began confidently with a belief that given the right measures demanding objectives could be achieved

on a regular basis. The Napoleonic phenomenon led Jomini and Clausewitz to explain to aspiring generals how they might win decisive battles and so decide the fate of nations . The recollection of the French Revolution and gathering social and political unrest encouraged the first professional revolutionaries to imagine equally decisive insurrections from which new forms of social order would emerge. Over a century later, large American corporations apparently unassailable and enjoying benign market conditions were encouraged by Chandler, Drucker, and Sloan to look to strategy as a guide to the organizational structures and long-term plans that could sustain this happy state of affairs.

In all three cases, experience undermined the foundations of this confidence. Victory in battle did not necessarily lead to victory in war. The ruling classes found ways to meet popular demands for political and economic rights that diverted revolutionary pressures. The comfortable position of American manufacturers was rocked by international competition , notably—but not solely—from Japan.

If Freedman thinks this is a critique of game theory rather than that of many gurus and practitioners of strategy, he is to some extent attacking a straw man. A strategy in game theory is never a fixed or rigid plan, it is a contingent plan that specifies action at each point as a function of everything that is known to have happened until then: chance events, actions of other players, even one’s own previous actions, and so on. Game theory has from the outset emphasized the role of uncertainty and information manipulation in the subject. Indeed, Freedman’s quote from the founder of modern game theory, John von Neumann, said this with utmost clarity (p. 151):

“No, no,” he said. “Chess is not a game. Chess is a well-defined form of computation. You may not be able to work out all the answers, but in theory there must be a solution, a right procedure in any position. Now real games,” he said, “are not like that at all. Real life is not like that. Real life consists of bluffing, of little tactics of deception, of asking yourself what is the other man going to think I mean to do. And that is what games are about in my theory.”

Some of the earliest classic papers in game theory, for example Kuhn (1953) deal with the role of information in games; the first Nobel prize in game theory recognized the contributions of Harsanyi (1967–8) and Selten (1975) to it.

However, Freedman does have a point. Game theory does an imperfect job of dealing with the need to rethink strategy in the course of play of a game. (In my judgment no one else—not a guru, not a practitioner—has a better solution either.) We can identify three conceptually separate problems in this.

First, even for games where the full tree can be laid out and a complete plan of action devised in principle, the necessary computation may be too complex. Chess is of course the standard example of this. In practice the top players or even the top computer programs can look ahead only a few moves, and the possible positions reached at the end of this computation are usually just as complex as the starting ones. The solution in practice is to assign intermediate value to these positions, for example so many points for a rook, so many for a passed pawn, and so on; these value functions are based on extensive experience of the history of chess games, and are revised as new experience emerges. In practice, therefore, chess combines the science of game-theoretic computation along a tree with the art of creating and revising good intermediate value functions. To me this is all good; a neat combination of art and science is much more attractive way to live and play than either on its own.

Second, an event to which one or all players may have assigned zero probability can happen. If this is an exogenous event, all anyone can do is to say “Oops, I thought this could never happen” and recalculate. If it is an event pertaining to an action by one of the players, the usual recourse is to the concept of subgame perfectness: players thinking about the game tree before this event will assume that actions from that point onward will follow according to the precepts of Nash equilibrium. However, this is in some sense fundamentally unsatisfactory. If someone does something that they shouldn’t have, shouldn’t you infer that something is wrong about your perception of the game—the objectives or constraints of that player, that is, that player’s type, for example? The issue has been discussed in the research literature on the subject, and Basu (1990) argues that the problem is insoluble. Perhaps

that is why it is ignored by almost all users of game theory including me, but probably it deserves more attention.

Finally, an event may occur that was not even in anyone's probability space; it is a matter of "Who'd have thunk?" rather than thinking but assigning zero probability, of what Donald Rumsfeld would call "unknown unknowns." Game theory is beginning to study this issue under the title of "awareness," and articles and surveys are beginning to appear, for example Schipper (2014), but it is work in progress.

Perhaps some day game theory will have good ways of dealing with these issues. In the meantime, theorists as well as practitioners have to live with some mixture of looking ahead partway down an imperfectly understood game tree and using intermediate value functions to evaluate nodes reached at its end, adjusting their picture of the tree itself and adding a few more branches to the look-ahead as they go along. I think the most important attribute for doing this successfully is an open mind. The strategist should always be aware of the possibilities that the space of events over which he or she defines probabilities is incomplete, that the prior probability distribution even over the recognized space of events is wrong, and calculation abilities are limited. Far from falling victim to the confirmation bias that is one of the traits behavioral researchers always find, the strategist should be on a positive lookout for evidence that his or her mental model of the world needs to be changed.

Freedman is correct to say or imply that theorists often theorize as if these problems did not exist, but he does not recognize that the many instances where he criticizes gurus and practitioners amount to the same flaw, that they are at least as doctrinaire and closed-minded. All of us—economists and game theorists of course, but even more importantly gurus, generals, political elites and CEOs who have much bigger egos and self-esteem and whose strategic errors can be hugely more costly—would do well to develop modesty, self-doubt, self-criticism. We would do well to write in large letters on the walls of our studies, our war-rooms, and our boardrooms Oliver Cromwell's admonition to the General Assembly of the Kirk of Scotland: "think it possible you may be mistaken."

6 Stories and Scripts

Everyone loves a good story. People remember stories far better than lists of facts or theories. Humans have evolved with stories—purely fictional, semi-factual and factual—told and retold around camp fires in evenings, recited by bards, written and printed in magazines and books. I agree with Freedman 100 percent when he argues for the “importance of stories as a means of thinking about and communicating strategy” (p. xv). Indeed, I have tried to practice the same method with some success (Dixit and Nalebuff, 2010). The case method of teaching in business schools is a highly developed form of storytelling. And most newspaper articles frame their topic and catch the readers’ attention by beginning with the story of some person or family facing that issue or in that situation.

In one sense I regard stories as even more important in game theory than Freedman does. Psychologists have shown that economists’ conventional model of rationality—conscious calculated optimization of a completely and consistently specified objective function—has serious problems and needs considerable modification. The difference that makes may be less important in traditional economics, where we are concerned with the market consequences of interaction of a large number of people: the departures of each from conventional rationality may average out in some cases, and are generally unlikely to overturn the basic framework of supply and demand. The issue is of the essence in game theory, where a small number of individuals interact, and the details of behavior of each can make a big difference to the responses of the others and hence to the outcome. But do psychologists have the best insights into human thinking and behavior in all its mixture of calculation and instinct, of wisdom and folly? I would argue that they do not; the best insights of this kind come from the best fiction writers—Trollope, Chekhov, Le Carré ... (You will surely have your own favorites to substitute here.) That is why I especially like Chwe (2013) and the website <http://www.gametheory.net>; these illustrate game-theoretic concepts using literature, music, and movies, or in other words, tell good stories about strategy.

Stories have their limitations and flaws in this role; Freedman is aware of them. First, they “reinforce[d] explanations that suited those best able to control the means of communication

while making it difficult to mount a challenge” (p. 565). As Churchill said, “History will be kind to me for I intend to write it.” A related problem is that everyone offers one story or a small selection from available stories, chosen to suit the point he or she wants to make, “without asking whether there were comparable cases where the outcomes had been quite different, or whether the same players would always get the same results by employing the approved strategic practices in slightly different circumstances” (pp. 565–6). Second, most stories are capable of different interpretations; the favored interpretation differs from teller to teller and changes over time. I discussed above how the interpretation of the David and Goliath story differs in Freedman’s telling and Gladwell’s (2013); Gladwell recounts how it has changed over time. Basically, too many things are going on in a story; how you interpret it depends on which things you regard as essential and which as incidental. One can always tell “just so” stories of everything by making the right selection of essential and incidental. As “individuals and companies who soared one moment ... come crashing down the next” (p. 572), what was held up to be a brilliant strategy turns into something that doesn’t matter and some previously incidental slip becomes the huge error. The problem with drawing any inferences from stories is that they are, in the econometrician’s terminology, badly under-identified.

We can learn from stories, and learn more from cumulation of related stories. (“Data” is the plural of “anecdote.”) But we must recognize that they give us only partial and provisional understanding, subject to revision as new data accumulate. And even when statistical inference becomes possible, it only gives us correlations. To understand causation we need to supplement this understanding with theories. Here is yet another false dichotomy: stories and theories are complements, not substitutes. In fact, many stories are just incompletely specified theoretical models.

Freedman seems to like scripts even better than stories. The concept of a script was new to me, and I suspect will be new to most economists and game theorists, at least in this form. I remain unconvinced of their value “as a way of thinking about strategy as a story told in the future tense” (p. xiv). Recall that a script is “a coherent sequence of events that an individual could reasonably expect” in a particular circumstance, “whether

as a participant or an observer” (p. 599). Scripts set the normal expectations of players in a game of strategy, and their interpretation of the actions of other players. This sounds almost like the concept of common knowledge used in game theory. However, we know from the theory of global games (see e.g. Carlsson and Van Damme 1993, Morris and Shin 2003) how even small departures from common knowledge can have dramatic consequences for the game equilibrium. And in many situations of conflict, the best strategy for one player may be to act contrary to the other’s script. In Gladwell’s (2013) telling, Goliath’s script followed the “single combat” norm of the time; he therefore expected David to come to him and engage in close hand-to-hand fighting. David disrupted this script very effectively by slinging a stone from a distance out of Goliath’s reach. The French script for the war in 1940 consisted of defending the Maginot Line and the Belgian-German border; disastrously for them, the German army disrupted that by its audacious advance through the Ardennes and the crossings of the river Meuse at Sedan, Dinant and elsewhere (see e.g. Shirer 1969, ch. 30). In 1967 the Arab script was equally effectively disrupted by the Israeli air attack from the west that delivered a knock-out blow to the Egyptian air force (see e.g. Oren 2002, pp. 170–178). Sure, Freedman recognizes that “few scripts were followed exactly” (p. 599), but their importance to the analyst of strategy may be as much for situations where they are deliberately and drastically disrupted as for ones where they are broadly adhered to. Freedman’s emphasis on fluidity and flexibility should have given him the same reservation about scripts as he has about game theory’s complete contingent plans.

Incidentally, disruption of a script is the basis of much comedy. Freedman introduces the concept of a script using the example of a visit to a restaurant: “starting with the menu and its perusal, ordering the food, tasting the wine, and so on” (p. 599). I could not but think of the occasions when Basil Fawlty thoroughly disrupted this script for diners at his hotel in the BBC TV sitcom *Fawlty Towers*.

7 Underdogs

Recall that “underdog strategies, in situations where the starting balance of power would predict defeat, provide the real tests of creativity” (p. xii). Leaving aside ancient and semi-

fictional examples like Odysseus, we have several instances of such asymmetric wars and struggles, where different strategies were used with different outcomes. Some general lessons can be drawn from these.

It appears that one common key to the success of underdogs is their patience and willingness to continue their struggle for a long time, often decades. Even if the superior power keeps on winning every encounter, if it eventually loses patience (usually because the public in the home country finds the accumulating cost in terms of money or lives too much), it will give up and the underdog will win. We have seen this twice each in Vietnam (against the French and the Americans) and Afghanistan (against the Soviets and now almost at the endgame against the Americans). “[T]here is cruel wisdom in the oft-quoted Taliban boast that ‘NATO has all the watches, but we have all the time’.”⁵

The main distinction is between peaceful resistance and armed struggle. Gandhi from the outset insisted on peaceful resistance, overcoming considerable initial opposition from other leaders in the Indian Congress Party. Nelson Mandela began as a proponent of armed struggle and gradually moved toward peaceful resistance to white rule in South Africa. Ho Chi Minh’s fight against the French colonists and later the South Vietnamese and American forces was always of the armed kind, with a mixture of guerrilla and regular warfare. The Taliban and their allies in Afghanistan fighting first against the Soviet Union and then against American forces, and the Palestinian leadership in the West Bank and Gaza, have favored violent methods with mixed success at different times.

In the armed context, underdogs can compensate for their lack of conventional military skill and firepower by employing tactics that increase their chances of getting lucky, for example by planting multiple IEDs (improvised explosive devices) by the roadside.

An important prerequisites for success of peaceful resistance in political struggles are an evident righteousness of their cause—evident not just to those on their own side but to a large public on the other side and to the wider world—and a modicum of civilization, some sense of shame or guilt, in the opponent. Gandhi targeted his strategy not so much to the British administration in India and the police and military they employed to suppress the

⁵Quoted by James Shinn in an Op Ed of the same title, *Wall Street Journal*, October 26, 2009.

struggle, but to the political elite and a large proportion of the public in Britain, who were horrified by the violent actions of their own agents, especially incidents like the Jalianwala Bagh massacre. Gandhi would have stood no chance of success against Hitler or Stalin; they would have jailed or killed him and as many of his followers as it took. In the other instances, it is not clear whether the rulers of apartheid South Africa had any direct sense of shame or guilt, but they did care to some extent about their standing in the international community, and eventually found the cost of being the world's pariahs too high. The same can be said of U.S. southern white rulers during the Civil Rights struggle. Most of them probably had no sense of shame or guilt, but their violent responses to the peaceful demonstrators alienated the political leaders in the rest of the U.S. to a point where the southerners' positions became untenable. The slogan "The whole world is watching" used by the student demonstrators at the 1968 Democratic Party convention in Chicago (p. 417) was an explicit reminder of the same thing to Mayor Daley and his forces, but those were probably equally without any sense of shame or guilt of their own and didn't care what the world thought of them.

Underdogs who pursued violent methods often miscalculated. They aimed "to provoke 'a violent counterattack that may be so offensive as to drive the populace into the arms of the insurgents.' As was often the case, the effect was the opposite" (p. 402). It "played into the Right's agenda, allowing the New Left to be portrayed as mindlessly disruptive rather than idealistic" (p. 412).

All this suggests that Yasser Arafat and his colleagues may have made a huge error by resorting to violence and terrorism against Israel. Those actions merely solidified Israeli public anger against them, whereas persistent peaceful resistance would have worked better: day after day and month after month of seeing pictures of peaceful sit-ins being broken up by Israeli forces would have generated sympathy and support from a wide spectrum of the Israeli public and from almost all of the rest of the world. I have heard it said that if the Palestinians had Gandhi instead of Arafat for their leader, they would have got their state twenty-five years ago, and there may be considerable truth to that.

8 We Are All Theorists

Coming to this book as an economic theorist and user of game theory, I was at the receiving end of Freedman's criticisms, many of them on the mark. I came away greatly reassured. If we theorists make extreme, unrealistic, or even absurd assumptions, most of the supposedly practical strategists and gurus of strategy in war, revolution and business whose thinking Freedman describes are theorists, too, and even worse than us. Supposedly practical men hold absurd ideological or doctrinaire views about the world and refuse to abandon them in the face of evidence. To cite just one example, Freedman quotes Peter Drucker: "The GM executives, for all that they saw themselves as practical men, were actually ideologues and dogmatic" (p. 494). Advisors and writers about strategy offer magic-bullet single solutions—attack the enemy's strongest point, swim in blue oceans away from the competition, and so on—as universally valid nostrums, or offer vague but grand sounding schemata with catchy acronyms—OODA loops and SWOT analysis. "A study of pundits ... demonstrated that their predictions were no better than might have been achieved through random choice, and that the most famous and regarded were often the worst" (p. 604).

For Freedman, "[t]he great strategists ... tended to be those who were able to identify the most salient features of a conflict, political as well as military, and how they might be influenced" (pp. 243–4). And stories help "sensemaking ... allowing 'the clarity achieved in one small area to be extended to and imposed upon an adjacent area that is less orderly' " (p. 564). These are exactly the things good theorists do. They lay bare their assumptions for all to see and discuss and criticize, instead of keeping them hidden, fooling audiences into thinking there are none, as others do. Perhaps even more importantly, they make sure that all their assumptions are internally coherent and consistent, and that their deductions are logically valid. Theorists' reasoning and answers are usually too complex, too contingent and hedged, for potential users. By contrast, gurus with their simple prescriptions and hypes get fat consultancy fees and sell a hundred thousand copies of their books at airports, and we are envious. But we offer a framework of thinking that is on somewhat sounder footing, is capable of gradual improvement, and has more lasting value. Give a man a strategic

nostrum and he may use it for a day but it will fail the next day; give him the tools of strategic thinking and he can use them for life.

9 Concluding Comments

This review has become quite long; even so I have been able to touch upon only a small subset of Freedman's broad and rich coverage. I would have liked to discuss many other topics, but the editors would not give me a whole issue of the journal! You will have to read the book to get the rest, and also to come to your own conclusions about matters I have discussed and ones I have left out. I urge you to do so.

Strategy: A History is an important, illuminating, and thought-provoking book for economists and game theorists. Most of us will disagree with many of the ideas and interpretations in it, but we should read it seriously and discuss it in our courses. In fact it should be required reading in the game theory courses of all graduate economics programs. I hope theorists will learn from historians and contribute something in return.

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