

Jane Austen, Game Theorist

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Forthcoming early 2013
Princeton University Press

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The argument

Nothing is more human than being curious about other humans. Why do people do what they do? The social sciences have answered this question in increasingly theoretical and specialized ways. One of the most popular and influential in the last fifty years, at least in economics and political science, has been game theory. However, in this book I argue that Jane Austen systematically explored the core ideas of game theory in her six novels, roughly two hundred years ago.

Austen is not just singularly insightful but relentlessly theoretical. Austen starts with the basic concepts of choice (a person does what she does because she chooses to) and preferences (a person chooses according to her preferences). Strategic thinking, what Austen calls “penetration,” is game theory’s central concept: when choosing an action, a person thinks about how others will act. Austen analyzes these foundational concepts in examples too numerous and systematic to be considered incidental. Austen then considers how strategic thinking relates to other explanations of human action, such as those involving emotions, habits, rules, social factors, and ideology. Austen also carefully distinguishes strategic thinking from other concepts often confused with it, such as selfishness and economism, and even discusses the disadvantages of strategic thinking. Finally, Austen explores new applications, for example arguing that strategizing together in a partnership is the surest foundation for intimate relationships.

Given the breadth and ambition of her discussion, I argue that exploring strategic thinking, theoretically and not just for practical advantage, is Austen’s explicit intention. Austen is a theoretician of strategic thinking, in her own words, an “imaginist.” Austen’s novels do not simply provide “case material” for the game theorist to analyze,

but are themselves an ambitious theoretical project, with insights not yet superseded by modern social science.

In her ambition, Austen is singular but not alone. For example, African American folktales celebrate cleverly manipulating others, and I argue that their strategic legacy informed the tactics of the United States civil rights movement. Just as folk medicine healed people long before academic medicine, “folk game theory” expertly analyzed strategic situations long before game theory became an academic specialty. For example, the tale of Flossie and the Fox shows how pretending to be naive can deter attackers, a theory of deterrence at least as sophisticated as those in social science today. Folk game theory has wisdom which can be explored by social science just as traditional folk remedies are investigated by modern medicine. Game theory should thus embrace Austen, African American folk tellers, and the world’s many folk game theory traditions as true scientific predecessors.

The connection between Austen’s novels, among the most widely beloved in the English language, and game theory, which can be quite mathematical, might seem unlikely. Austen’s novels are discerning and sensitive, while game theory is often seen as reductive and technical, originating out of a cold war military-industrial “think tank.” But since both Austen and game theory build a theory of human behavior based upon strategic thinking, it is not surprising that they develop the same concepts even as they consider different applications. Strategic thinking can be developed to surprising virtuosity, but people do it all the time (for example, I hide the cookies because I know you will eat them all otherwise). A theory based on strategic thinking is of course not the only theory of human behavior or always the most relevant, but it is useful and “universal” enough to have developed independently in quite different historical contexts.

Why should we care about Austen’s place in the history of game theory? The most obvious trend in the social sciences in the last fifty years, visible in scholarly journals without even reading the articles, is greater use of mathematics. A large part of this trend is the growth of game theory and its intellectual predecessor, rational choice theory. This growth is indeed one of the broadest developments in the social

sciences in the last fifty years, significant enough to have broader social as well as scholarly implications; for example, some claim that the 2008 global financial crisis was caused in part by rationality assumptions in economics and finance (for example Stiglitz 2010; see also MacKenzie 2006).

Recognizing Austen as a game theorist helps us see how game theory has more diverse and subversive historical roots. Austen and African American folk-tellers speak as outsiders: women dependent on men and slaves struggling for autonomy. They build a theory of strategic thinking not to better chase a Soviet submarine but to survive. The powerful can of course use game theory, but game theory develops distinctively among the subordinate and oppressed, people for whom making exactly the right strategic move in the right situation can have enormous consequences: women who might gain husbands, slaves who might gain freedom. The dominant have less need for game theory because from their point of view, everyone else is already doing what they are supposed to. Game theory is not necessarily a hegemonic cold war discourse but one of the original “weapons of the weak” (as in Scott 1985). By recovering a “people’s history of game theory” (as in Zinn 2003) we enlarge its potential future.

Understanding Austen’s six novels as a systematic research project also allows us to interpret many details not often examined. For example, why do Austen’s Jane Fairfax and Mr. John Knightley discuss whether the reliability of postal service workers is due to interest or habit? When Emma Woodhouse paints a portrait of Harriet Smith and Mr. Elton adores it, why does Emma think that Mr. Elton is in love with the painting’s subject, not its creator? Why is Fanny Price grateful to not have to choose between wearing Edmund Bertram’s chain or Mary Crawford’s necklace, but then decides to wear both? When they meet for the first time, why does Mrs. Croft ask Anne Elliot whether she has heard that Mrs. Croft’s brother has married, without specifying which brother? There is of course an immense literature on Austen, and I cannot claim the primacy of my own reading. Still, a strategic sensibility can help generate and answer questions like these.

Recognizing Austen as a game theorist is worthwhile not only for the sake of intellectual genealogy. Anyone interested in human behavior should read Austen because her research program has results.

Austen makes particular advances in a topic not yet taken up by modern game theory: the conspicuous absence of strategic thinking, what I call “cluelessness.” Even though strategic thinking is a basic human skill, often people do not apply it and even actively resist it. For example, when Emma says that “it is always incomprehensible to a man that a woman should ever refuse an offer of marriage. A man always imagines a woman to be ready for anybody who asks her” (E, p. 64), she argues that men as a sex are clueless: they do not consider women as having their own preferences and making their own choices. Clueless people tend to obsess over status distinctions: in the “malitis” tale, a slaveowner, heavily invested in the caste difference between him and his slaves, has difficulty understanding his slaves as strategic actors and is thereby easily tricked. Cluelessness, the absence of strategic thinking, has particular characteristics and is not just generic foolishness.

Austen explores several explanations for cluelessness. For example, Austen’s clueless people focus on numbers, visual detail, decontextualized literal meaning, and social status. These traits are commonly shared by people on the autistic spectrum; thus Austen suggests an explanation for cluelessness based on individual personality traits. Another of Austen’s explanations for cluelessness is that not having to think about what another person is thinking is a mark of social superiority over that person. Thus a superior remains clueless about an inferior to sustain the status difference, even though this prevents him from realizing how the inferior is manipulating him.

I apply Austen’s explanations for cluelessness to real-world examples, such as United States military actions in Vietnam and Iraq, and consider additional explanations. For example, entering another’s mind can involve imagining oneself in that person’s body, walking in his shoes and seeing through his eyes, and because of racial or status differences, a person who regards himself superior finds this physical embodiment repulsive.

In this book, no previous familiarity with game theory is presumed. In the next chapter, I explain game theory from the ground up; game theory can be applied to complicated situations, but its basic ideas are not much more than common sense. I start with the concepts of choice and preferences. I discuss strategic thinking as a combination of several skills, including placing yourself in the mind of others, inferring others' motivations, and devising creative manipulations. To illustrate game theory's usefulness, I use a simple game-theoretic model to show how Beatrice and Benedick in Shakespeare's *Much Ado About Nothing*, Richard and Harrison in Richard Wright's *Black Boy*, and people revolting against an oppressive regime all face the same situation. Game theory has been criticized as acontextual, technocratic, an ideological justification for selfishness, indeed capitalist ideology in its purest form. But Austen makes us rethink these criticisms, for example in her argument that a woman should be able to choose for herself regardless of whether others consider her selfish. I conclude the chapter by looking at previous work trying to bring game theory, as well as related concepts such as "theory of mind," together with the study of literature.

Before immersing into Austen, I discuss the strategic wisdom of African American folktales, such as the well-known Tar Baby tale. The tale of Flossie and the Fox, in which the little girl Flossie protects herself from Fox's attack by telling Fox that she does not know that he is a fox, is an elegant analysis of power and resistance which I also represent mathematically. These folktales teach how inferiors can exploit the cluelessness of status-obsessed superiors. In their 1963 Birmingham, Alabama campaign, civil rights strategists counted on the notoriously racist Commissioner of Public Safety "Bull" Connor to react in a newsworthy way, and sure enough, he brought out attack dogs and fire hoses.

In this book, no previous familiarity with Austen is presumed. I provide a summary of each novel in chapter 5, arguing that each is a chronicle of how a heroine learns to think strategically: for example, in *Northanger Abbey*, Catherine Morland must learn to make

her own independent choices in a sequence of gradually more important situations, and in *Emma*, Emma Woodhouse learns that pride in one's strategic skills can be just another form of cluelessness. Austen not only theorizes strategic thinking, but also theorizes the process by which people, growing from childhood into adult independence, learn strategic thinking.

Next I trace the detailed connections between Austen's novels and game theory, taking the six novels together. This is the analytic core of the book, chapters 6 to 12. Austen prizes individual choice and condemns any attempt to deny or encumber a person's ability to choose. There is "power" in being able to choose. Austen consistently delights in how completely different feelings, such as the pain of a broken heart and the pleasure of a warm fire, can compensate for each other. This commensurability, that feelings can be reduced into a single "net" feeling, is the essential assumption behind game theory's representation of preferences as numerical "payoffs," and indeed Austen sometimes jokes that feelings can be represented numerically. A person's preferences are best revealed by her choices, as in economic theory's "revealed preference"; for example, Elizabeth Bennet estimates the strength of Mr. Darcy's love by the many disadvantages it has to overcome.

Austen's names for strategic thinking include "penetration" and "foresight," and the six novels contain more than fifty strategic manipulations specifically called "schemes." For Austen, "calculation" is not the least bit technocratic or mechanistic. Austen makes fun of the strategically sophomoric; people like Mrs. Jennings whose manipulations are hopelessly misconceived illustrate (the absence of) strategic skill better than the guileless. The strategically skilled carefully observe others' eyes, not just because "penetration" and "foresight" are visual analogies, but because a person's eyes reveal his preferences.

Austen's commitment to game-theoretic explanation is delightfully undogmatic. She generously allows for the importance of alternative explanations, such as those based on emotion, instinct, and habit, but consistently favors explanations based on choice, preferences, and strategy. Austen's heroines make good choices even when overpowered

by emotion. Even blushing, which seems to be a completely emotional response, is regarded at least partly a matter of choice. Austen acknowledges the influence of instincts and habits, but dislikes them: instinctive actions turn out badly, and habits, such as Fanny Price's submissiveness or Willoughby's idleness, are usually painful or ruinous. Twice Austen explicitly compares an explanation based on people's habits with an explanation based on their preferences and concludes that preferences are more important. Austen allows that people often follow rules or principles instead of choosing consciously, but observes that adopting a rule is itself a matter of choice.

Austen acknowledges the importance of social factors such as envy, duty, pride, and honor but in general condemns them; Austen's heroines succeed not because of social factors but in spite of them. For example, when Fanny Price receives Henry Crawford's proposal, her family members invoke social distinction, conformity, duty, and gratitude to pressure her to accept, but Fanny heroically makes her own decision based on what she herself wants. Even if social factors affect you, Austen maintains that they should affect only your behavior and not your thought processes, which must remain independent. Even under the most severe social constraints, a person can strategically maneuver, and in fact constraints make you learn strategic thinking more quickly.

Austen also takes care to distinguish strategic thinking from concepts possibly confused with it. Strategic thinking is not the same as selfishness: Fanny Dashwood is both selfish and a strategic blunderer, for example. Strategic thinking is not the same as moralizing about what one "should" do: Mary Bennet quotes maxims of proper conduct but is useless strategically. Strategic thinking is not the same as having economistic values such as frugality and thrift: Mrs. Norris exemplifies both economizing and strategic stupidity. Strategic thinking is not the same thing as being good at artificially constructed games such as card games: Henry Crawford likes to win card games but in real life cannot choose between Fanny Price and the married Maria Rushworth and fails disastrously.

In terms of results, Austen generates multiple insights not yet approached by modern game theory. In addition to her treatment of cluelessness, these insights are in four topics. First, Austen argues that strategic partnership, two people joining together to strategically manipulate a third person, is the surest foundation for friendship and marriage. Each of her couples come together by jointly manipulating or monitoring a third person, for example a parent about to embarrass herself. Explaining to your partner your motivations and choices, strategizing in retrospect, is for Austen the height of intimacy. Second, Austen considers an individual as being composed of multiple selves, which negotiate with each other in a great variety of ways, not necessarily in a “chain of command.” Just as a person anticipates other people’s actions, a person can anticipate her own actions and biases; a person’s self-management strategy depends on her goals. Third, Austen considers how preferences change, for example through gratitude or when an action takes on a new social connotation (for example, when rejected by a suitor, you are eager to marry another to “take revenge”). Fourth, Austen argues that constancy, maintaining one’s love for another, is not passive patience or superficial willfulness, but is rather an active, strategic process which requires understanding the other’s mind and motivations.

Austen even comprehensively considers the disadvantages of strategic thinking. Strategic thinking takes mental effort, gives you a more complicated moral life, allows you to better create excuses for others’ misdeeds, and enlarges the scope of regret. People do not confide in you because they think you have already figured everything out; strategic skill is not charming or a sign of sincerity. Contemplating the machinations of others can be painful, and anyhow sometimes it is better to plunge ahead and not worry about how people will respond. Finally, being good at strategic thinking risks solipsism: you see strategicness where none exists, and pride in your own ability makes you think that others are perfectly knowable.

My claim is that Austen consciously intended to theorize strategic thinking in her novels; the occupation with strategic thinking is Austen’s and not just mine. I do not present direct evidence for this

claim (such as a letter from Austen laying bare her objectives) but a preponderance of indirect evidence. There connections between Austen's writings and game theory are just too numerous and close. Almost always when a child appears in her novels, for example, the child is either a student of strategic thinking (a three-year-old who learns to not stop crying because she gets attention and sweets) or a pawn in someone else's strategic action (Emma carries her eight-month-old niece in her arms to charm away any residual ill-feeling after an argument with Mr. Knightley). After Henry Crawford's proposal to Fanny Price, Austen includes no fewer than seven examples of "reference dependence," in which the desirability of an outcome depends on the status quo to which it is compared. It is difficult to explain this repetition as a coincidence or unconscious tendency, and the remaining conclusion is that Austen explicitly intended to explore the phenomenon.

Perhaps Austen's most extensive contribution to game theory is her analysis of cluelessness. Austen gives five explanations for cluelessness, the conspicuous absence of strategic thinking. First, Austen suggests that cluelessness can result from a lack of natural ability: her clueless people have several personality traits (a fixation with numeracy, visual detail, literality, and social status) often associated with autistic spectrum disorders. Second, if you don't know much about another person, it is difficult to put yourself into his mind; thus cluelessness can result from social distance, for example between man and woman, married and unmarried, or young and old. Third, cluelessness can result from excessive self-reference, for example thinking that if you do not like something, no one else does either. Fourth, cluelessness can result from status differences: superiors are not supposed to enter into the minds of inferiors, and this is in fact a mark or privilege of higher status. Fifth, sometimes presuming to know another's mind actually works: if you can make another person desire you, for example, then it truly doesn't matter what he previously thinks. Finally, I apply these explanations to the decisive blunders of superiors in Austen's novels.

I then consider cluelessness in real-world examples and discuss five more explanations, which build upon Austen's. First, cluelessness can simply result from mental laziness. Second, understanding

a person's decisions often involves imagining oneself physically embodying him, which a superior finds distasteful or repulsive. Third, because social status simplifies and literalizes complicated social situations, people who are not good at strategic thinking invest more in status and prefer social environments, such as hierarchies, which define interactions in terms of status. Fourth, in certain situations cluelessness can improve your bargaining position; by not thinking about what another person will do, you can commit yourself to not reacting. Fifth, even though strategic thinking is not the same thing as empathy (understanding another's goals is not the same thing as sympathizing with them), one might lead to the other; a slaveowner for example might be easily tricked by his slaves, but if he took their point of view well enough to think about them strategically, he might not believe in slavery anymore. Finally, I apply these explanations to the disastrous US attack on Fallujah in April 2004.

Why do people do what they do? This question is too interesting to be confined to either novels or mathematical models, the humanities or the social sciences, the past or the present. I hope this book shows that it is not at all surprising that Austen, a person intensely interested in human behavior, would help create game theory.