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Clifford Orwin's *The Humanity of Thucydides* (1994), is a distinguished contribution to scholarship, cited by classicists, philosophers, and political scientists alike. Orwin (1994: 12) does not read Thucydides through the lens of contemporary social science. Indeed, he proposes that the greatest advantage Thucydides' ancient readers had over us, as moderns, was that the ancients "lived and breathed politics while remaining innocent of 'political science.'" By contrast, I have argued that Thucydides was in some ways so precociously modern that he may be said to have invented political science (Ober 2006). Here I double down my bet, as it were, suggesting, first, that Thucydides was *also* the inventor of an important branch of behavioral economics, and next that by reading him as such we may understand him better. Yet there is considerable common ground between Orwin's Thucydidean humanism and my own understanding of what Thucydides has to offer political theorists today.

Introduction

A central argument in Orwin's book is that political thought, as it was practiced by Thucydides and as it may legitimately be practiced by his successors, is concerned with understanding human nature – with *to anthropinon,* "the human thing." Thucydides is concerned, as we ought to be, with the question of how individuals and states can be expected to behave, both in ordinary and in extraordinary circumstances. Their behavior is conditioned by nature, in ways that may be modulated by specific political regimes, but that ultimately transcend all regimes (Orwin 1994 10-11). That seems to me largely correct.

I will suggest that Thucydides sought to understand the effect of human nature on history by reference to what we would now call behavioral psychology. This means that the objects of his study (ancient humans) are fundamentally similar to the objects studied by modern psychologists' (modern humans). And so, while it may be modulated by specificities of historical eras (ancient or modern), human nature ultimately transcends time. Thucydides grasped a basic psychological fact that is at the center of contemporary studies of behavioral economics: Although the human mind is capable of employing complex forms of reasoning, people make only limited use of reason when making choices involving probability and risk. The limits to reason in choices involving risk are evident in decision-making groups.

Thucydides recognized that the human mind is wired in certain ways in respect to rationality, desire, judgment, and decision. He understood humans as rational in some important ways – that is, as beings that are prone to seek their own advantage and, sometimes but not always, their community's advantage (Orwin 1994 chapter 1). They do so by strategic calculations that take into account the likely preferences over outcomes of other fairly rational individual and collective actors. In Thucydides, the relevant actors are men and city-states. Yet Thucydides also recognized that there are limits to human rationality when rationality is understood (as it is for the purposes of this paper) as accurate calculation of self-interest, and behavior that follows logically from that calculation. Human rationality is limited because (among other causes) the emotions of fear and hope affect how people assess and respond to risk and opportunity. Fear and hope are strong motivators in Thucydides. I will seek to show that Thucydides paid close attention to systematic deviations from rationality occasioned, variously, by fear of loss and fear of disappointment over unrealized gains, and by hope of gain and hope of avoiding loss.

Orwin explores both rationality and its limits in Thucydides. The tension between a dream of rational policy-making that would consistently take proper account of risk and opportunity, and the limits of rationality as an instrument of real-world policy-making, are important to Orwin's discussion of what he calls Thucydides' "Athenian thesis": the argument that individual and state interests take priority over considerations of justice. The Athenian thesis is elaborated, in conflicted ways, by the Athenian envoys at Sparta in Book 1 and at Melos in book 5. Among the problems inherent in the Athenian thesis is that the effective pursuit of interest demands strict rationality. In practice, individual and collective agents often fail to identify the course of action that would best serve their interests. Chance and probability challenge human reason, especially in collective agents. In Orwin's words: "Cities are called on to act not on certainties but on probabilities. This very fact fosters the human proclivity for entrapment by improbabilities" (Orwin 1994 202).

I build on Orwin's argument to suggest that one of Thucydides' lessons is that, under the impetus of fear and hope, individuals and groups often misestimate their actual chances of realizing gains or avoiding losses, and they make poorer choices as a result of those mistakes. The results of misestimation, in the high-stakes environment of a great war, often proved catastrophic. I argue that we can better appreciate some details of Thucydides' understanding of human rationality, and his

understanding of reason's limits in the task of risk and opportunity assessment, by approaching several key passages via the "prospect theory" developed by the psychologists Daniel Kahneman and Amos Tversky. This approach is decidedly *not* meant to "teach Thucydides something new." I agree with Orwin that we read Thucydides because he has more to teach us than we have to teach him. Rather, treating Thucydides as a "prospect theorist *avant la lettre*," allows us, as moderns, to leverage the results of contemporary theoretical and experimental social science in order to grasp a bit more of what Thucydides expected his most astute readers - those who are addressed in the famous "possession for all time" passage (1.22.4) - to take away from his text. I assume that Thucydides intended his narrative to instruct future political agents, and that among those agents are statesmen for whom Pericles will be a model – albeit a complex one.

Each of the passages I will discuss – the narratives of the Melian Dialogue and Sicilian Expedition Debate in books 5 and 6, the "Corinthian assessment" of risk-seeking Athens and risk-averse Sparta in book 1.68-71, and the analysis of Pericles' leadership and rhetoric at 2.65 -- are marked by their striking form and content. I assume, without arguing the point here, that some part of the understanding of human nature that Thucydides hoped his reader would take away from his text, and the justification for his belief that leaders might intervene beneficently in human affairs, are to be found in these well-known parts of the history.

Prospect theory: The Four-fold pattern

The idea that Thucydides might fruitfully be read as a prospect theorist is not original to me. A decade ago, Ned Lebow (2001) reviewed humanistic work on Thucydides by political theorists and classicists, prominently including a discussion of Orwin's *Humanity of Thucydides*. In an aside, Lebow (2001 557) claimed that, "Thucydides had an intuitive grasp of prospect theory (Levy 1992, 1996; Tversky and Kahneman 1992), which is based on the robust psychological finding that people are generally more concerned with preventing loss than they are with making gains." Lebow did not pursue this insight, but I suggest that looking more carefully through the prism of prospect theory at Thucydides' accounts of how decision-makers assess chances of loss and gain under conditions of extremity may help us to see more of what Thucydides himself meant for careful readers to take away from his history.

In their work on heuristics and prospective judgments (summed up, and refined in Kahneman 2011), Kahneman and Tversky sought to debunk the strong anti-humanistic form of Rational Choice Theory – that is the version of the theory that says that people actually *are* fully rational in just the way that contemporary economists say they *ought* to be. In order to be fully rational, to be an *Econ* rather than a *Human* in the terms that Kahneman (2011 269-70) borrows from Richard Thaler (Thaler and Sunstein 2008), one must consistently choose the course of action that will maximize one's expected utility. Utility may be anything that someone happens to value. Expectation is based on an assumption of full information (including knowledge of others' preference orderings, or at least their probable order) and an accurate understanding of statistical probability. Kahneman and Tversky showed, by reference to cleverly designed experiments, that Humans

(that is, actual people), unlike Econs (the hypothetical choice-makers of economic theory), commonly make mistakes (that is, their behavior does not follow from expected utility maximization) when assessing probabilities. Moreover, some kinds of mistakes are quite predictable, based on how the human mind ordinarily functions. The upshot is that humans make their judgments (and act accordingly) based on "prospective utility" rather than on "expected utility." As a predictable result, when Humans consider uncertain prospects they stray from the course of strict rationality, typically in the direction of over-weighting potential losses relative to fixed costs.

Over-weighting loss, resulting in risk-aversion, is a key part of prospect theory, as Lebow pointed out. Yet under some circumstances, agents will over-estimate the chance of achieving very low-probability gains (as, for example when they buy lottery tickets), or of avoiding high probability losses, resulting in either casein risk-seeking behavior. The experimental evidence on human behavior in regard to losses and gains, in the face of high- and low-probability prospects, produce what Kahneman and Tversky (Kahneman 2011 310-21) called "the four-fold pattern"; this is represented in a 2x2 matrix, adapted here as Table 1. In light of foreseeable behavioral consequences of weighting errors, anyone who, ex ante, reasons as an Econ and assumes that others will do likewise (by developing a strategic plan based strictly on expectation), is likely to find, ex post, that her prior beliefs about others' choices, and thus about outcomes, have been proved false. Making plans based on an assumption of full rationality is, therefore, likely to be counterproductive. This is, I think, a fundamental part of the rationality and probability problem that Thucydides explores in what Orwin calls "the Athenian thesis."

[Table 1 about here]

As Lebow (2001, cf. Ober 2001) argued, Thucydides has too often been read by political scientists specializing in International Relations as a straight-forward, rational-choice "strong Realist" -- that is, in the terms adopted here, as an Econ assessing the behavior of Econs. Instead, I suppose that Thucydides was a highly sophisticated thinker who could reason *both* as Econ and as a Human, and who, in his history, assessed the behavior of Humans. To attend, with Orwin, to "the humanity of Thucydides" is *not* to suggest that Thucydides was an irrationalist who was *unable* to think as an Econ. One point of Orwin's analysis of the Athenian thesis is to show us why and how "reasoning too much like an Econ and not enough like a Human" will get leaders and states into serious trouble. But in order to develop his critical approach to reason and choice, Thucydides necessarily had to be able to understand rationality as it is (and was) understood by Econs. Indeed, optimal policy is, for Thucydides, rational policy insofar as probabilities ought to be rightly weighted. Thucydides surely supposed that a measure of rationality in policy-making was essential for the success of states. The error he teaches his readers to avoid is not rationality per se, but confusing optimal rationality with the actual choices likely to be made by real-world Human decision-makers. As Orwin puts it

(1994 204), although in a different context, "For reasons that are wholly rationalistic, Thucydides rejects 'rationalism in politics.'"

Thucydides teaches his reader the difference between rationality and irrationality, and he carefully recorded specific deviations from rationality and pointed to the costs of those deviations. He also understood, and shows his readers how better to understand, the roots of certain specific tendencies to deviate from rationality in extreme circumstances. Those roots lie in the way the human mind works -- i.e. in human nature. Thucydides instructs his attentive reader about what an effective leader will need to know in order to devise rational policy. But he also offers his reader answers to another set of questions: Why and when can people be expected to deviate from rationality? How might they be led, through rhetorical persuasion, to choose a more rational course? How can a community avoid the pitfalls of assuming too much risk, while also avoiding the costs of over-insuring against risk? The upshot is that under the right kind of leadership, a community might come to do better, over time, by taking on a reasonable level of risk, and making reasonable gambles on appropriate opportunities. That kind of leadership is a scarce resource in the historical past narrated by Thucydides. I believe that his ambition as a writer (or part of it) was to make effective leadership a more abundant resource for the future.

Melos: Certainty effect and loss

The Melian narrative (including the Melian Dialogue) in book 5.84-115 provides Thucydides with a case study in risk, hope, and prospective choices that deviate from rationality with catastrophic consequences. Orwin (1994 chapter 5) focuses on Thucydides' treatment of the related themes of risk, fear, and hope in the affair of Melos. He notes, rightly, that if we, Thucydides' readers, are to take away the right lesson from the Melian affair we need to attend to the Melians' mistake in acting on the basis of on their hopes of salvation, by gods or Spartans. Yet, as Orwin also emphasizes, we must also attend to the error made by the Athenian envoys in failing to anticipate that their rationalistic arguments will fail with the Melian oligarchs who hold decision authority (Orwin 1994 110, 113-117).

The Athenians impute too much rationality to the Melians. The Athenian envoys, reasoning as Econs, apparently believed that, once the situation was made clear to them, the Melians would choose to act as did people in early Greek coastal communities. In the "Archaeology" Thucydides notes that the coast-dwellers rationally submitted to the first Greek imperial power, the Cretan King Minos, and, in the long run, they benefitted materially as a result (Thucydides 1.8.3: "love of gain would reconcile the weaker to the dominion of the stronger"). What is the aetiology of the Melian failure to reason in this long-term cost-benefit manner? Orwin points to the emotion of shame: The Melians fear the disgrace that submission without fighting would entail and so they pin their hopes of salvation on the gods and the Spartans (Orwin 1994 103, 108-9). It is this emotional commitment to fear and hope that the Athenian envoys fail to shake with their rationalistic argument.

In light of Kahneman and Tversky's prospect theory, I emphasize a somewhat different, but complementary, aspect of the situation: In the face of the Athenian threat, the Melian oligarchs make a gamble that is ill-advised from the perspective of

rationality as expected utility maximization. In so doing, they act just as other (modern) humans predictably do when they are driven by the hope of avoiding the high probability of a large loss. They imagine the condition of salvation too vividly; they hope against hope ("a strange but all-too-human turn of thought": Orwin 1994 116) that they will be able to retain their status quo. In this case the status quo is Melos' standing as an independent state and the oligarchs' own position of authority in that state.

As the Athenian envoys clearly (and, as it turns out, rightly), point out to them, there is very little chance that the Melians can keep the status quo in the face of greatly superior Athenian power and the firm Athenian determination to incorporate Melos into the Athenian empire. The Athenians also make it clear to the Melians that incorporation into the empire will not mean the loss of everything: If the Melians submit without a fight they will be peacefully brought into what amounts to an Athenian co-prosperity sphere. The current ruling oligarchs may lose their monopoly on political power. Taxes will certainly increase, since Melos will pay tribute. And of course Melos will lose the coveted status of independent state. But most Melians will keep their lives and much of their property.

For the Melian decision-makers, faced with an uncertain prospect, the situation comes down to a choice between the weights assigned to different possible outcomes, based on utility and probability. The rational (expected utility) choice will be the one with the greatest weight, once probability has been properly factored in – this is the "expectation principle" of rational choice theory. Holding utility constant, the greater the probability of an outcome, the greater weight it should have. The Melians must weigh the tiny chance of keeping everything against the certainty of keeping a substantial fraction of what they currently have. Whatever probabilities one might assign to the two possibilities, the general situation is clear enough: there is a minute chance of keeping the status quo. It is certain (presuming, as I think we should, that the Athenians' claim that submission will not entail destruction is credible) that the Melians can keep a sizable part of what they have if they submit.

Let us say, for the sake of the argument, that there is a 5% chance that the Melians can keep 100% of what they now have; a 100% chance of keeping 25% of what they have. Under these conditions, it is clear that the Melians' best choice, based on probability and weighting, is to submit. Yet in fact the Melians choose to fight; predictably they lose and are destroyed.

The irrational choice of the Melian rulers seems to take the Athenian envoys by surprise, but it would not be unexpected to anyone familiar with what Kahneman and Tversky call the "certainty effect" (Kahneman 2011 chapter 29: 310-21). Kahneman and Tversky showed, by reference to a series of experiments, that most people are risk seekers when they are faced with a prospective choice between a small chance to avoid a great loss and the certainty of retaining a smallish part of what they have. Offered a choice between a tiny chance to keep everything (avoiding all loss) and the certainty of high costs (losing a lot but not all), most people will irrationally chose to gamble on the tiny chance of avoiding the great loss. As Kahneman (2011 318-19) notes: "people who face very bad options take desperate gambles, accepting a high probability of making things worse in exchange for a small hope of avoiding a large loss. Risk taking of this kind often turns manageable failures

into disasters. The thought of accepting the large sure loss is too painful, and the hope of complete relief too enticing, to make the sensible decision that is time to cut one's losses." This somber assessment exactly describes the Melians' situation, their decision, and its consequences.

The Athenian speakers in Melian Dialogue are exasperated because they believe, rightly, that the better choice for the Melians is obvious on the face of it. Moreover, the Athenians also rightly believe that they are being more generous than they need to be (5.111.4). They could simply take everything by seizing the island by force. Or they could, based on the hypothetical probabilities above, offer the Melians less than 25%, yet still be presenting them with an offer that a rational actor would take. This is the substantive (as opposed to merely procedural) reason that the Melian Dialogue can be carried on under the banner of *epieikeia*: The Athenians are in fact making an offer that is more reasonable, more equitable, overall better than what they (as representatives of Athens) *could* demand (cf. Orwin 1994: 97-98). Yet the Melians, for their part, become increasingly frustrated because they regard the Athenians as stubbornly refusing to acknowledge the strength of their vividly imagined prospective hopes. They too are right, insofar that in so doing they are acting entirely in accord with ordinary human nature. The result of this standoff between the thinking typical of Econs and of Humans is to turn, in Kahneman's words (cited above), "a manageable failure into disaster."

The point that we should take away from Kahneman and Tversky's discussion of choices made in the face of high probability of large losses, and from Thucydides' Melian narrative, is that human choice-makers, when faced with very bad options, are not only irrational, they are *predictably* irrational: Anyone aware of this aspect of human nature – which is to say, in the vocabulary of prospect theory, anyone who is aware of the certainty effect - should anticipate a failure to employ the expectation principle when people are confronted with dire prospects. Having paid proper attention to the arguments on both sides of the Melian Dialogue, Thucydides' careful reader will anticipate that eminently Human failure of reason; the Athenian envoys, unable to break out of their habit of reasoning as Econs, do not.

In the Econ's expected-utility world the Athenian envoys are rational and more generous than they need to be, but in the world of Humans they are foolish in imagining that the Melians will think like Econs. Had the Athenian envoys themselves had a more sophisticated idea of the difference between expectations and prospects, they would have taken the likelihood of an irrational Melian choice to resist into account. Kahneman and Tversky demonstrate what Thucydides certainly knew: that the Melians made a perfectly normal (if tragic) human-nature-based misestimate in weighting – the misestimate is foreseeable (although not certain) and Thucydides' attentive reader will take that into account if and when she or he is faced with relevantly similar circumstances.

Sicilian Expedition Debate: Certainty effect and gain

The hypothesis that Thucydides understood the role played by the certainty effect on choices made in the face of high probability events is confirmed by a consideration of the narrative of the Athenian debate on the Sicilian expedition in book 6.8-26. Thucydides pointedly remarks (6.1.1) that this debate was held in the

same winter as the annihilation of the Melians. It is a commonplace of Thucydidean scholarship that the Melian Dialogue and the Sicilian Expedition Debate are presented in the history as two sides of a coin – although there is much debate about how to understand the coin itself (Orwin 1994 111, 118). I suggest that the coin is the certainty effect, and that its two sides are distinguished by the likelihood of great loss and great gain.

As in the Melian Dialogue, the issue in the Sicilian Expedition Debate is weighting a highly probable outcome against a certain cost. But, whereas the Melian situation concerned a probable loss (Table 1, upper-right box), the Sicilian Expedition Debate centers on the uncertain but probable prospect of a large gain (Table 1, upper-left box). As we have seen, in the face of losses the certainty effect produces irrational risk-seeking. Faced with a high probability of a large gain, however, most people will be irrationally risk averse: They will tend to over-weight the disappointment they will feel if, contrary to expectations, the gain is not realized. On the basis of experimental evidence, Kahneman and Tversky show that most people, when faced with (for example) a 95% chance to win a large sum of money, say $10,000, will accept the "unfavorable settlement" of a sure-thing payout of less than $9500. Another way of putting this is that most people will choose to pay more than they rationally ought to (in this case, $500) to insure against the small chance of failing to realize the gain.

In the Sicilian Expedition Debate, Nicias, a prominent Athenian leader, tries to persuade the Athenians, voting in a democratic assembly, not to send a military expedition to Sicily. A rival leader, Alcibiades, advocates for the expedition. The background to the Sicilian Expedition Debate is as follows: The Athenians had already decided to authorize a moderate-sized military expedition to Sicily. Based on arguments made by Athenian leaders (including Alcibiades), the Athenians believe that there is a high probability of achieving large gains. This was the expeditionary force that Alcibiades, in a speech to the assembly answering Nicias, defended against Nicias' "no expedition" option. Alcibiades reiterated to his audience that an expedition would probably enable the Athenians to take Sicily and/or achieve other utilities (6.17-18). Alcibiades clearly got the better of this first exchange. Having listened to Nicias and Alcibiades, the Athenians remained convinced that a moderate expedition had a high probability of realizing a big gain.

Having failed in his first attempt to scuttle the expedition, Nicias once again attempted, in a second speech to the assembly, to achieve his "no expedition" goal -- or, failing that, to eliminate all risk of great loss (6.24.1). His second speech was based on what Thucydides (6.19.2) points out was a rhetorical ploy: Nicias realized that he could not achieve his best outcome of "no expedition," so long as the choice was between "no risk and no gain (because no expedition)" and the high probability of a big gain from a moderate, and thus not overly costly, expedition. Therefore, Nicias attempted the ploy of inflating, to a prohibitive level, the cost of the alternative to "no expedition." He emphasized the residual risks associated with the moderate expedition (6.20.2-23.2). He told the Athenians that they could eliminate the risk of loss, and thus be certain that they would either realize substantial gains, or at least be sure of returning home safely- but *only* if they were willing to pay for a much bigger, much more costly expedition (6.23.3). In effect, Nicias kept his original

"no expedition" option on the table, but replaced Alcibiades' moderate expedition option with a new super-sized expedition option, so the choice is now between no expedition and a huge and costly expedition.

Like the Athenian envoys at Melos, Nicias made the error of thinking like an Econ and assuming that his audience would do likewise, by properly weighting probabilities based on the expectation principle: Nicias' rhetorical ploy is predicated on his belief that the Athenians would see that the cost of "insuring" the relatively small probability gain (the gap between Alcibiades' confident assessment of the likelihood of substantial gains and certainty) was irrationally high. The insurance of the vastly larger expedition was over-priced, in that the difference in cost of a moderate and huge expedition much exceeded the increased (imagined) probability of realizing the gain.

If Nicias' ploy had worked just as he planned, the Athenians would have concluded that the cost of the over-insured expedition exceeded the expected gain.[1] And so, when it is a matter of no expedition or the super-sized expedition, the rational choice is no expedition. But, had Nicias thought in terms of the certainty effect, he would have realized that "people are averse to risk when they consider prospects with a substantial chance to achieve a large gain" (Kahneman 2011 317). Nicias unwittingly offered the Athenians the chance to "lock in a sure gain" (or what they believed was a sure gain) by over-insuring against risk. The effect on the audience was not a Econ-like recalculation of the weighted probabilities in favor of the no-expedition option, but rather a cascade of enthusiasm for the sure-thing expedition, over-priced as it was. As Thucydides describes matters, in the aftermath of Nicias' speech a "great eros" arose among the assemblymen (6.24.3). The eros arose (at least in part) due to Nicias' offer to guarantee the outcome (realize the gain of conquest or come back safely having done exciting things, i.e. having realized other utilities) if the Athenians will pay the extra premium for the super-sized expedition.

By paying a big premium to achieve what they (falsely as it turns out) believed to be the certainty of avoiding any bad outcome, and keeping alive the high chance of getting a really big payoff, the Athenians were, ironically in the context of Thucydides' text, acting unlike their ordinarily risk-seeking selves (below, Corinthian assessment). They acted in the risk-averse manner associated with the conservative Nicias, and unlike the risk-seeking Alcibiades, in their willingness to "over-insure" in favor of certainty. The irony deepens as we continue into Book 7 of Thucydides' history and learn that the Athenians' risk-aversion had the unexpected result of taking on a super-risky gamble, one that goes spectacularly badly in the end. Yet we can also now see why the passions ran so high in the assembly held to decide about the expedition: No one saw, ex ante, the residual risks of failure that became so evident ex post. Because of Nicias' ploy, the most risk-averse among the Athenians (the older men, especially) seem to have got their way -- the insurance is paid. Meanwhile, Alcibiades and the younger, more risk-seeking, of the Athenians got their way too - the thrill of the expedition and the chance at a big payoff. So, in the moment of choice, it seemed, everybody won (6.24.3).

Or almost everybody. A few doubters remained, but they feared to speak out against the passionate and near-unanimous enthusiasm of the assembled Athenians

(6.24.4.). By drawing the reader's attention to the silenced doubters, Thucydides underlines both the danger of cascades of enthusiasm among decision-making collectivities, but also the gap between the rational policy (either no expedition, or a moderate sized expedition with a high probability of success: cf. Orwin 1994 118-19), and the actual choice made by the assembly. Once again, the attentive reader has learned an important lesson about how to anticipate decision-making by Humans in the face of high-probability events and under the shadow of the certainty effect.

The Corinthian assessment: Possibility effect and loss and gain

The closely related Melian and Sicilian Debate narratives juxtapose the two sides of the certainty effect, as described by Kahneman and Tversky: In these two cases, foreseeable weighting errors, and thus irrational (from the point of view of expected utility) behaviors, arise in the face of a high probability of losses *and* in the face of high-probability gains. This is a marked juxtaposition in Thucydides' text: The events on Melos and Sicily prove to be the hinge of the war, ultimately setting up what Thucydides called the greatest event in all Greek history: the catastrophic Athenian loss on Sicily (7.87.5). The juxtaposition of irrational choices, based on over-weighting options relative to their probability, is, I believe, strong, if not decisive, evidence that Thucydides was in fact thinking, and intended his reader to think, in terms of something like prospect theory in contrasting optimal choices, made on the basis of expectation and statistical probability, with actual choices made under the influence of hope and fear.

The linked Melian and Sicilian Expedition Debate narratives allow Thucydides to show his reader important continuities across human societies: The powerful, confident, democratic Athenians in their public assembly calculate their interests in faulty but entirely Human ways, just as do the weak, fearful, oligarchic Melians when meeting in camera with the Athenian envoys. The apparently vast differences between the contexts tend to wash out, if and when we attend to the similarities of the weighting problem faced by the Athenians and the Melians alike. The difference in behavior turns out not to depend on the assumed "national character" associated with different peoples and regimes: We expect the democratic Athenians to be risk-seeking, the oligarchic Melians to be risk-averse; but they each defy our expectations. Rather, the difference in behavior turns on whether the high-probability situation concerns a loss or a gain. The "human thing," is, we learn, to make certain specific sorts of error in weighting when faced with uncertain prospects, and to deviate from rationality accordingly.

The Melian and Sicilian Expedition Debate narratives offer particularly vivid cases for Thucydides' exploration of the logic of prospective choices, but examples can be multiplied. The two cases considered above concern the certainty effect: prospective gains and losses in a situation of high probability. It remains to consider, more briefly, weighting errors in the face of the potential gains and losses associated with low probabilities. Once again, particularly obvious examples are available in a strongly marked passage of Thucydides' text.

In a much-studied speech at book 1.68-71 by the Corinthians, a speech that I have discussed elsewhere (Ober 2010) under the rubric of the "Corinthian

assessment," Thucydides introduces his reader to the psychological pattern that Kahneman and Tversky call the "possibility effect." This is the low-probability level (the two lower boxes of the 2 x 2 matrix : Table 1) of the "four-fold pattern." In the speech, Corinthian envoys to Sparta lay out to their Spartan audience the differences between the characters of Athenians and Spartans. The distinctions they set up prove to be generally valid, when tested against Thucydides' subsequent narrative, although, as we have already seen, there are limits to the predictive power of these ultimately regime-based assessments of the expected behaviors of different societies.

The Spartans, as described by Thucydides' Corinthians occupy the lower-right "losses" box in the "low probability/possibility effect" row (Table 1). As predicted by the model, the Spartans are said to be generally risk-averse. The Spartans' fear of large losses appears to be the emotion driving key policy decisions. Sparta's fear of loss, when faced with the growth of Athenian power, was according to Thucydides, the "truest cause" of the Peloponnesian War (1.23.6).[2] As a result of their fear, the Spartans over-invest in efforts (prominently including their highly specialized way of life) that they believe will insure against any chance that they will lose their leading position in the Greek world. They are, consequently, over-willing to accept a relatively unfavorable settlement, if it will preclude a chance of loss. An example is their decision in 425 BCE to give up offensive operations against Athens and, as it seems at the time, the chance to win the Peloponnesian War, in order to secure lives of Spartan soldiers captured by the Athenians on Sphakteria. Spartan risk-aversion is linked by the Corinthians with their slowness to seize a potential opportunity. This slowness is what, according to Thucydides *in propria persona* (8.96.5), loses the Spartans the opportunity to end the war in 413, when Athens was reeling from the catastrophe in Sicily.

The Athenians, as described by the Corinthians are the diametric opposite of the Spartans, and as such they occupy the lower-left "gains" box in the "low probability/possibility effect" row (Table 1). The Athenians, according to the Corinthians, are risk-seekers, always ready to gamble on long chances in hope of a large gain (like a modern lottery player). As such, when judged by the standard of rationality, they are potentially too quick to act; over-willing to take risks in low probability ventures. One predictable result is the Athenian tendency to reject favorable settlements – as indeed they do in 425, after their victory at Sphakteria (4.41.3-4: Spartans sue for peace but "the Athenians, however, kept grasping at more, and dismissed envoy after envoy.")

The Corinthian assessment, like the paired Melos and Sicilian Expedition Debate narratives, show us two sides of a specific psychological effect. The Corinthian assessment is not, however, strictly parallel: The Corinthians' point, made to their Spartan audience, is that the Athenians are having the better part of it. It is the Spartans, they claim, who must change their habitual risk-aversion if they are to compete with the risk-seeking Athenians. If we are, on the whole, meant to believe the argument of the Corinthians (and, based on statements that Thucydides makes *in propria persona*, I think that, on the whole, we are: Ober 2010), the deviation from rationality and thus from the best long-term policy is thus more on the Spartan side. Why, we as readers ought to ask, should that be? Not, if we are to

follow the logic of Thucydides' claims about the continuity of human nature, because Athenians differ from their opponents in their fundamental nature. Nor does Thucydides' narrative support the idea that (as the the Athenians were prone to think) Athenians were inherently cleverer than other people, or that democracy inherently yields more rational judgments when managing risk. Thucydides suggests, rather, that at the time to which the Corinthians referred (in the years before the outbreak of the War), Athens had superior leadership.

Pericles and leadership

Leadership is a very important matter in Thucydides' narrative. Thucydides did not expect Humans to change their fundamental nature by transforming themselves into Econs as a result of reasoned arguments. But he did, as we have already seen, believe that some individuals could learn to reason as Econs. That ability is, for Thucydides, a necessary, but insufficient condition for superior leadership. When leaders do not take the human thing adequately into account, as Nicias and the Athenian envoys did not, their societies risk leaning too hard on Orwin's Athenian thesis, with potentially catastrophic results. But if a leader is able to reason as an Econ *and* is capable of anticipating and addressing the foreseeable weighting errors of others, and if his position is strong enough to enable him to direct state policy over a period of time, the result may be outstanding state performance. This is exactly what Thucydides leads his readers to believe was the case in the lead-in to the Peloponnesian War, when, Thucydides tells us (2.65.9), Athens was nominally a democracy but Athenian policy was directed by Pericles, Athens' "first man."[3]

Although Thucydides is not blind to Pericles' policy failures, Pericles is presented as a near-ideal leader for Athens in the run-up to the Peloponnesian War and in the early years of the war (Orwin 1994: 28). Pericles' excellence as a leader lies in part in his Econ-like capacity to judge situations dispassionately, in the light of all relevant information, and to give the right weight to probabilities in designing policy. But that is only part of the story. Because Athens remained procedurally a democracy, and all legislation had to be enacted by a citizen assembly, Pericles must also excel in his capacity to recognize the likelihood and the direction of probability-weighting errors on the part of his fellow Athenian citizens. Finally, he must be able to at least partially correct for those anticipated errors through affecting the relevant emotions, and thus the behaviors and attitudes, of the citizenry. The tool by which he accomplished this is rhetoric. Rhetorically sophisticated public speeches are, of course, an outstanding feature of Thucydides' text, and Thucydides was a careful student of rhetoric and rhetorical effects. Pericles is singled out by Thucydides for his distinctively productive (when compared to later, inferior Athenian leaders) use of rhetoric.

As Thucydides famously noted (2.65.9), Pericles used rhetoric to correct for potentially dangerous swings in public emotion. His speeches encouraged the Athenians when they were tending to be over cautious (i.e. too likely to accept unfavorable settlements) and spoke to restrain them when they were over-enthusiastic (i.e. too likely to reject favorable settlements). All of this points to a leader who makes policy based on expectations (and thus proper weighting of

probabilities) and who understands the tendency of the citizenry to fall into prospective errors. Pericles, we may say, employed his rhetorical skills to keep Athens within a tighter band of formal rationality than they had resources to keep themselves: He encouraged them to judge prospects more as if they were expectations, in light of relevant information and statistical probability.

This is, I think a plausible context for understanding what Thucydides' emphasizes as Pericles' central skill as a leader: his foresight: *pronoia*. To attribute foresight to Pericles (or other leaders, notably Themistocles) is not to imply that Pericles could somehow mysteriously predict the future. Rather it is to underline that he was very good at information management, at calculating probabilities, and at managing prospective judgments, unbiased by hope or fear. Pericles' possession of *pronoia* does not mean that his plans always go well. While the risks Pericles takes are reasonable, they inevitably entail a chance of loss or unrealized gain. Inevitably some of Pericles' rational gambles will not pan out, and we should expect some noteworthy failures. But we should also expect that, over time, rationally weighting probabilities will work in Athens' favor, and thus that Athens will grow in wealth, power, and security. In the decades before the Peloponnesian War, both of these predictions prove true (as we see from Thucydides' narrative of the so-called Pentacontaetia): There are setbacks (e.g. the Egyptian campaign of the 350s, the Boeotian campaign of the early 440s: 1.109-114). Yet in the period of Pericles' leadership Athens became exceptionally prosperous (2.65.5, 2.65.13).

Thucydides famously castigates Pericles' successors as inferior leaders, who "ended by committing even the conduct of state affairs to the whim of the multitude. This, as might have been expected in a great and sovereign state, produced a host of blunders, among them the Sicilian expedition…" (2.65.10-11). Thucydides' analysis of why the Sicilian expedition failed is complex, but this passage brings us full circle – to a condition in which foreseeable prospective errors are augmented, rather than corrected by the speeches of would-be leaders (like Alcibiades and Nicias). This will in turn lead to bad results that may still shock, but will no longer surprise, Thucydides' most attentive and astute readers.

Reading Thucydides as a prospect theorist interested in leadership has the potential to enlighten more passage than I have space to discuss here. Consider for example, the "sunk cost fallacy" – as it is expressed in the tendency of leaders to become over-invested in their favorite projects. The Sicilian expedition turns from a very bad situation into a total disaster, because Nicias, the last Athenian commander standing in Sicily, becomes grossly over-invested in the expedition he had once opposed, and refuses to cut his losses after the circumvallation strategy for capturing Syracuse fails. Again, human nature is consistent over time: Nicias' behavior closely models familiar modern cases of CEO's whose over-investment in failing projects creates serious principal-agent problems in respect to the organization they lead (Kahneman 2011 345-46).

Conclusions

I have focused in this paper on Thucydides' precocious grasp and clear presentation of certain persistent features of human psychology and behavior that have only recently been adequately explained by some contemporary social

scientists. As noted above, Thucydides has been embraced by social scientists as a Realist *avant la lettre.* He is certainly that, when read on one level. But, unlike some strong Realists, Thucydides was well aware of the limits of ordinary human rationality. Thus, he was also an astute critic of the kind of thinking that takes "Realism as rational choice" to be the truth about human nature.

As Orwin has shown, Thucydides is intensely concerned with humanity "in the round." He does not make the Econ's error of thinking that Humans are, or ever can be, entirely rational. But neither does he suppose, with tragic Realists (Lebow 2003), that our irrationality dooms us to the certainty of tragedy. Rather, Thucydides suggests that the right kind of leader can help to control the more extreme effects of hope and fear on risk assessment. Moreover, leadership of this beneficent kind need not be merely an accident of nature. Thucydides wrote in the hope that his work would be "judged useful by those inquirers who desire an exact knowledge of the past as an aid to the understanding of the future, which in the course of human things must resemble if it does not reflect it." (1.22.4). I take this to mean that at least pat of Thucydides' goal in writing was to produce future statesmen with the skills necessary to improve their communities. One of those skills is, I have argued, an understanding of prospect theory and what can be done to address foreseeable prospective errors.

Attending, with Orwin, to the humanity of Thucydides, means that we must resist falling into the hero-worshiping error of imagining Thucydides to be a infallible, god-like guide to human behavior in conditions of extremity. We must attend not only to Thucydides' insights but to his limitations. If Thucydides has one core lesson to impart I suppose that it might be summed up as, "Observe accurately! Criticize sharply! Test theory against evidence!" In that spirit, we need not accept Thucydides' analysis of the operations of Greek political institutions, or his explicit or implicit arguments for why (or even whether) they failed. I have discussed, elsewhere and in some detail (Ober 1996 chapter 6, 1998 chapter 2, 2001, 2010), some areas in which I think Thucydides' argument about the inherent flaws of Athens' democracy in the absence of Periclean leadership went wrong. But, by the same token, I am convinced that the more carefully we read Thucydides, as a historian and as a social theorist, the more impressed we will to be at his analytic rigor, his prescience, and his humanity.

	Gains	**Losses**
High probability "Certainty effect"	1. Likelihood of big gain 2. Fear of disappointment 3. Risk averse 4. Accept unfavorable settlement (over-insure) *Sicilian Expedition Debate*	1. Likelihood of big loss 2. Hope to avoid loss 3. Risk seeking 4. Reject favorable settlement *Melian Dialogue*
Low probability "Possibility effect"	1. Slight chance of big gain 2. Hope of gain 3. Risk seeking 4. Reject favorable settlement *Athenians (per Corinthians)*	1. Slight chance of big loss 2. Fear of loss 3. Risk averse 4. Accept unfavorable settlement (over-insure) *Spartans (per Corinthians)*

Table 1. Emotions, behavior, and attitudes under uncertain prospects: the four-fold pattern. After Kahneman 2011 317. 1 = prospect. 2 = focal emotion evoked by prospect. 3 = how most people behave. 4 = expected attitude. Examples from Thucydides in *italics.*

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Notes.

[1] Part of Nicias' strategy is to introduce the idea that there is a risk of loss, in the case of the moderate expedition, and to balance the probability of a big gain against the probability of no-gain (but no loss other than cost of expedition) in the case of the super-sized expedition. Say, for the sake of a simplified argument, that the cost of the super-sized expedition was 10,000 talents (T), the potential gain was 18,000 T, the probability of realizing that gain is 50%, and the probability of coming home safely without a gain is 50%. In this case the expected gain is negative, so launching the expedition is irrational.

[2] Here I differ with Orwin 1994: 32-37 and Appendix 2, in how to interpret the key phrase. Orwin translates prophasis as "allegation" but I do not understand how something can be at once "alleged" and yet "least expressed" *aphanestatên logôi*); it seems to me that an allegation is, by definition, expressed rather than hidden, whereas causes, including the truest, are sometimes most obscure. Moreover, at 1.88.1 (with Orwin p. 42), Thucydides in propria persona says that Spartan fear of Athens *was* their actual (not just declared) motive for declaring war.

[3] This is not, I have argued elsewhere (Ober 1996 chapter 6), actually an accurate portrayal of Athenian government, but that is beside the point of this paper.