To Merge or Not To Merge:

The Role of "Worst-Case Scenarios" in the Rice-Baylor Merger Debate

Robert M. Raphael, Ph.D
Dept. of Bioengineering, Rice University
December 9th, 2009

Several weeks ago I picked up a quite fascinating book called "Worst Case Scenarios" by Cass Sunstein. The back cover had caught my eye: "Sunstein … illuminates very complex areas of rational choice theory … [and outlines] intelligent thought about decision making in conditions of uncertainty." The book takes as a paradigm the question of why terrorism produces an acute reaction in people and climate change does not. ***Why is it easy for governments to get people to react to the fear of terrorism, but much harder to get people to react to the fear of climate change?*** As I read, I began to realize that this book gives important insight our own concerns with regard to a possible merger with Baylor, both as expressed in the questions the faculty recently relayed to the Senate, and in opinions shared in numerous open forums and editorials over the past few months.

Financial Risk and Probability Neglect

A central concern in the merger debate is the financial risk to Rice, and there is contention over the direness of Baylor's current financial situation. Scenarios have been proposed in which Baylor is on an inexorable march towards bankruptcy. Several faculty, notably Dr. Vardi in his public lecture, have used such scenarios to conclude that "the risks of merging outweigh the benefits": that the cautious thing for Rice to do is to not go forward with the merger. A recent faculty editorial echoed these ideas, raising the possibility that merging with Baylor could leave Rice financially impoverished in the foreseeable future.

Sunstein argues that one reason people are more afraid of terrorism than climate change is ***probability neglect, which is the tendency to focus on the "worst case scenario" itself, rather than on the probability that it may actually happen.*** Recent psychological experiments confirm that human beings will pay a significant amount of money to avoid what they perceive as an emotionally-laden hazard, regardless of whether the probability is very high or very low. In some cases, people will venture little assessment of probability at all if they feel sufficient emotion with regard to a particular outcome. At Rice, some feel the university climate they love and cherish will be radically and forever altered by a merger with Baylor. As human beings we tend to be "loss averse", and prefer the *status quo* over newly introduced risks. We should ask ourselves whether probability neglect influences our response to the Baylor merger. From my own experience, when I have tried to discuss the benefits of the Baylor merger with colleagues, it is sometimes impossible to move beyond the immediate reply of: "But there are enormous risks!"

What is the probability of the worst case scenario?

Is Baylor truly on the verge of financial implosion or is it facing serious financial challenges that could be alleviated by a merger? It is probably impossible to give an exact estimate, but we need to reflect on this question.   I was discussing Rice faculty concerns about the Baylor merger with a colleague from Johns Hopkins, and he mentioned to me that: "No top 20 medical school has ever failed." *So if the probability of the worst case scenario - a complete financial collapse of Baylor – is zero, or very low (especially after the merger), how much should this concern influence our course of action?* Let's consider a lesser fear that has been expounded – that Baylor will be a financial drain on Rice for the foreseeable future – which the Administration has argued will not be the case. Are we, as Sustein claims is common, disregarding the Administration's projection because of the tendency to assume a worst case scenario independent of its probability? And does the recent "availability" of bad economic news make us subconsciously more likely to believe a detrimental financial outcome will be the case?

Another scenario that has been discussed is that even if the merger goes forward, Baylor may become a second tier medical school because top research faculty leave. How well grounded is this fear? Does this ignore the possibility that Baylor faculty possess a deep sense of loyalty to their institution, or that other ties might bind them to Houston? Many Rice faculty are afraid that the Rice culture might be radically altered by the Baylor merger. Should we also be willing to envision the same institutional loyalty among current and future Baylor faculty?

Fear of Climate Change and Rice's Future

Sunstein discusses another reason it is difficult to trigger strong emotions in people based on fear of climate change – simply stated, *it is difficult for people to envision future scenarios that occur as a result of gradual change.* In the case of climate change, it is hard to convince people that cumulative changes will occur over the next 20-30 years that could have catastrophic consequences if we do not reduce emission of greenhouse gases.   Perhaps it is likewise hard for us to truly envision that Rice will gradually fall in the rankings in 20 years as a result of competition from state schools, to cite an Administration argument, if we fail to expand. At Rice, we are dealing with cutbacks in department budgets right now, which have immediacy – more like a terrorist attack. In this climate, it is easy to arouse fears of future budget stress.

These considerations tie-in with Sunstein's summary of his overall thesis as to why people fear terrorism more than climate change: "The images associated with terrorism are concrete and easy to envision; the images associated with climate change are highly abstract." *One may paraphrase this for the Rice-Baylor merger: the financial and cultural risks associated with acquiring Baylor are "concrete and easy to envision", whereas the images of the long-term benefits (increased institutional stature and impact) are more abstract and difficult to quantify.* Perhaps we should ask ourselves whether we are focusing more on potential negative aspects of the merger precisely because these are so much easier to envision and avoiding the far harder task of considering the potential long term "best case" scenarios for Rice?   If our concern is for the future of Rice, shouldn't we be doing the latter?

Rational Decision Theory: Maximizing the Best Case Scenario

So, what should the path forward for Rice be? Rational decision theory requires that we not only consider worst case scenarios, but that we also weigh these against other possible outcomes. One common feature of the arguments I have read against the merger is that they fail to assign any real probability to the future best case scenario for Rice. There is a hidden assumption that the probability of the worst case scenario is very high, or even unity, and the probability of the best case scenario is very low. Suppose this latter assumption is wrong, and the probability of the best case scenario is modest – let's say 40%. [1] In the case of the Baylor merger, support for assigning a modest value to the best case scenario comes not only from the distinguished history of the institution and the current ranking of its basic science departments but also from fact that Baylor has recently made some excellent hires and has also recently received a substantial influx of NIH stimulus funding. The fact that Baylor has been able to accomplish this despite its budget hardship testifies to the vitality and stability of Baylor's research programs.

A simple premise of rational decision theory is that when faced with uncertainty between possible courses of action, we should make decisions that reduce the risk of or even eliminate the worst case scenario (provided this does action does not result in huge losses). Suppose the conditions the Administration has put on the Baylor merger are designed to do exactly this - create conditions which minimize the chance of financial or cultural damage and maximize the chance of long-term benefits. ***Could it be that the probability of the best case scenario we find difficult to envision is actually much higher than the worst case scenario our human nature teaches us to fear?*** Are there truly compelling reasons to assume that we cannot create a possible future in which Rice emerges with vibrant schools of Engineering, Natural Science, Humanities, Social Science, Architecture, Business, *and* one of the premier Medical Schools in the world?

Conclusion

Merging with Baylor is certainly a bold project for Rice and analysis of worst-case scenarios is an appropriate and necessary intellectual exercise. While many well-founded arguments can be made for and against the merger, ***we should analyze these arguments not just in light of their substance, but in light of our human tendency to fear some things over others, often to the neglect of great possibilities.*** My hope is that we can collectively come to best possible decision given the current uncertainties that decisions of this magnitude inevitably entail. Perhaps as we move towards this decision, we should remember that the odd fact about worst case scenarios is that they usually don't actually come to pass. We should also remember the inspiring words of Robert Kennedy:

"The future does not belong to those who are content with today, apathetic toward common problems and their fellow man alike, timid and fearful in the face of bold projects and new ideas. Rather, it will belong to those who can blend passion, reason and courage in a personal commitment to the great enterprises and ideals."

---

[1] The rigorous assignment of probability when outcomes are uncertain is often difficult, but Sunstein argues for the utility of even approximate assignments. More advanced versions of rational decision theory can be invoked that involve cases where outcomes can be identified but definitive probabilities are impossible to assign.