



## Reading Notes for Jared Diamond's *Collapse*

The book attempts to answer the question, “*What caused some of the great civilizations of the past to collapse into ruin, and what can we learn from their fates?*”

This is an intoxicating promise, one that if achieved, may allow us to solve the largest problem facing today’s civilization: the global environmental sustainability problem. It is a direction of exploration that few have attempted. Most merely describe the symptoms of the problem, lament about its severity, and implore the reader to help solve it. Some are more prescriptive and describe a potential solution, which is rarely adopted. Only a few take the much more difficult road of asking a “Why?” question, as Diamond has done here. Let’s see how he did.

### The Prologue – A Tale of Two Farms

Diamond lays out how he will approach answering the guiding question. He begins with a riveting comparison of two civilizations, 500 years apart in time, and thousands of miles apart in space, but eerily similar in their susceptibility to impending collapse. On page 3 Diamond does what few authors do: he defines his objective. The general objective was the guiding question. He now hones that by defining **collapse** as: “A drastic decrease in human population size and/or political/economic/social complexity, over a considerable area, for an extended time.”

So that the book may start right off on being evidence based, on page 11 he presents five broad factors for understanding why collapse occurred in the past. Four of the factors may or may not be significant in a particular case. But the fifth factor, a society’s response to its environmental problems, always proved decisive. In other words, solving the environmental sustainability problem was the key problem. That it was so in the past is strong proof that it is so today.

On page 18 Diamond states that “This book employs the comparative method to understand societal collapses to which environmental problem contribute.” Very nice. What he is about to do is seldom seen in popular environmental literature: a rigorous analysis of the facts. For this reason I’d have to give the book a perfect ten on its potential to make a major contribution to its guiding question. Perhaps after you’ve read it, you will agree.

But is the comparative method enough to answer the question? Those who have worked on environmental issues have good reason to wonder. This is because comparative data only describes cultures and their problem factors at the very high level. Comparative data does not begin to go deep inside a culture and show what the dominant social forces and feedback loops involved were. For that, you have to much deeper. Will Diamond do that?

The prologue finishes by summarizing what the parts and chapters will try to cover. For me the last part, part four, is the payoff. This attempts to “extract practical lessons for us today.” Chapter 14 asks, “How could a society fail to have seen the dangers that seem so

clear to us in retrospect?” Now *there's* a question I'd like to see answered. Chapter 15 addresses “the role of modern business” in the solution. Great! Another very productive area, because my own work hypothesizes that the modern corporation is the dominant agent in the world today. Finally, the last chapter, number 16, summarizes things and addresses the factor of globalization.

A good prologue should state the full core argument of the book, including its key conclusions. This one doesn't quite do it. It poses very much the right question, but does not present the answer. The closest it comes is on page 23, where it says “... group decision making can be undone by a whole series of factors, beginning with failure to anticipate or perceive a problem, and proceeding through conflicts of interest that leave some members of the group to pursue goals good for themselves but bad for the rest of the group.” But these answers do not go very far. They leave one thirsting for the deeper fundamental causes. For example, why do societies “fail to anticipate or perceive a problem”? Why do “conflicts of interest” occur? What can be done to resolve “conflicts of interest” enough to permit solution of the problem?

Perhaps the answers are in the chapters that follow.

## **Chapter 1 – Under Montana's Big Sky**

Diamond proved his ability to make the reader open his or her eyes as wide as saucers, with his tale of the conquest of the Incas in *Guns, Germs, and Steel*. Using first hand written accounts of the battle, he told how a small band of less than 200 Europeans, with horses and guns, slaughtered and conquered an endless mass of tens of thousands of Incans. The battle ended as it does in chess, when the king was captured.

The first chapter of *Collapse* tries to do the same, with a fresh approach. Instead of going to the past, Diamond goes to the present and to where most of his readers live: the United States. He picks a favorite haunt: the Bitterroot Valley of Montana. While it seems pristine, with endless beauty and bounty, looks are in this case deceiving. Diamond serves Montana up as the paragon of our times: healthy on the surface, but at the moment terminally ill below. As he writes on page 32:

“The Bitterroot Valley presents a microcosm of the environmental problems plaguing the rest of the United States: increasing population, immigration, increasing scarcity and decreasing quality of water, locally and seasonally poor air quality, toxic wastes, heightened risks from wildfires, forest deterioration, losses of soil or of its nutrients, losses of biodiversity, damage from introduced pest species, and effects of climate change.”

The shock effect comes from the contrast of beauty versus self-destruction, all right there, in one state. Diamond does that not only to drive his message home, but uses the chapter to illustrate the five factor framework he uses throughout the book to analyze the problem.

But are these five factors enough to fully answer the guiding question? That is an interesting question you might ask as you read the chapter and the rest of the book.

## **Chapter 2 – Twilight at Easter**

Probably the two most commonly cited cases of collapse due to environmental overshoot are the Fertile Crescent of Mesopotamia and Easter Island.

The Fertile Crescent has a strong claim to the greatest collapse ever. Covering some 400,000 to 500,000 square miles, these *were* highly fertile lands, watered by the Tigris and Euphrates rivers, and blessed with favorable climate. It was here that agriculture was born, some 11,000 years ago. Remains of the first known Neolithic farming settlements, dating to 9,000 BC, have been found there. Long, long ago, the area was so populated and so prosperous that it has been nicknamed the Cradle of Civilization.

But it collapsed. Due to thousands of years of irrigation, subsequent salination, and displacement of forest with agriculture, the area is now the Cradle of Suffering. It is now part of the deserts and arid lands of Israel, Lebanon, Jordan, Syria, Iraq, and southeastern Turkey.

Twilight at Easter is about a similar rise and fall in a much smaller area, a 66 square mile island. Diamond has done his homework, and goes deep into the more subtle elements of the entire collapse cycle. One reason he selected this case is “it proves to be the closest approximation that we have to an ecological disaster unfolding in complete isolation.” This, when it can be found, is a scientist’s dream, because it means that outside factors, which so often make the difference, were nil. The reasons for collapse could only come from within the isolated system of Easter Island.

I found this chapter absolutely fascinating. For me the real insights were the role of the political system in the building of the giant stone statues that became Easter Island’s biggest mystery when it was discovered in 1722. There were hundreds, weighing up to 75 tons, on platforms weighing up to a mind boggling 9,000 tons. Who built them? It was so inconceivable that the islanders themselves did that some speculated that aliens from another planet must have come and put them there. However as Diamond explains, it was the dozen clans that controlled the island who put them there. “The clans competed peacefully by seeking to outdo each other in building platforms and statues.”

Tragically, it was statue building that seems to have led to Easter Island’s collapse. Their movement from quarry to erection site required so many trees for logs and rope making that deforestation was complete by 1400 to 1600 AD. The island was colonized by Polynesians in 900AD, so self-destruction took about 500 years. Why did it happen?

The proximate cause was deforestation. The cause of that was competitive statue building. But what was the cause of that, when it must have been so obvious that was self-destructive?

As you read the chapter, pause every now and then and see if you can answer that question. This is what I did, and because of it, I got a lot out of the chapter.

However, much to my chagrin, Diamond didn’t answer the question directly, but promised to “return to this question in Chapter 14.”

## **Part Four: Practical Lessons**

Now we get to the real value of the book. What can we learn by the study of past collapses? Is it possible we can gain insights that will lead to figuring out how to solve our own nearly identical problem of global environmental sustainability?

### **Chapter 14 – Why Do Some Societies Make Disastrous Decisions?**

Let’s pause to examine the importance of asking “Why?” and where it can lead, if done correctly.

Successful game players, parents, business managers, researchers, investigators, doctors, and other types of problem solvers all have one key skill in common: the ability to ask the right question. Nothing else so separates the sheep from the goats. *The greatest problem solving skill is the ability to ask the right question.*

The Japanese have institutionalized this golden nugget insight into the practice of Kaizen. **Kaizen** is gradual, unending process improvement, based on asking why. It teaches “problem solvers to ask why not once but five times. Often the first answer to a problem is not the *root cause*. Asking why several times will dig out several causes, one of which is usually the root cause.” The example below shows how it was possible “to identify the real cause and hence the real solution: attaching a strainer to the lubricating pump. If the workers had not gone through such repetitive questions, they might have settled with an intermediate countermeasure, such as replacing the fuse.” (From *Kaizen: the Key to Japan’s Competitive Success*, by Masaaki Imai, 1986, page 50.)

### **The Five Whys of Kaizen**

Question 1: Why did the machine stop?

Answer: Because the fuse blew due to overload.

Question 2: Why was there an overload?

Answer: Because of inadequate lubrication.

Question 3: Why was it inadequate?

Answer: Because the lubrication pump was not functioning right.

Question 4: Why wasn’t the pump working right?

Answer: Because the pump axle was worn out.

Question 5: Why was it worn out?

Answer: Because sludge got in.

In this chapter we have a chance to see how deep a problem solver can go when working on the global environmental sustainability problem. My hope was that Diamond would go deep. He had already done it in *Guns, Germs, and Steel*. Could he do it again?

Diamond states the chapter’s question again on page 419 as “How on earth could a society make such an obviously disastrous decision as to cut down all the trees on which it depended?” He discusses the work of others, and concludes that we “have identified a baffling phenomenon: namely, failures of group decision making on the part of whole societies or other groups.” He decides there is no one answer that fits all cases, and proposes “a roadmap of factors contributing to failures of group decision making.” Now maybe we’re about to come to the answer!

Such a roadmap sounds promising. And indeed it was, when he wrote these words on page 427: (italics added)

“The third stop on the roadmap of failure is *the most frequent, the most surprising*, and requires the longest discussion because it assumes such a wide variety of forms. Contrary to what Joseph Tainter and almost anyone else would have expected, *it turns out that societies often fail even to attempt to solve a problem once it has been perceived.*

“Many of the reasons for such failure fall under the heading of what economists and other social scientist term ‘*rational behavior*,’ arising from *clashes of interest* between

people. That is, *some people may reason correctly that they can advance their own interest by behavior harmful to other people.*”

Diamond discusses this, and points out that there are “three alternative arrangements that have evolved to preserve a commons resource while still permitting a sustainable harvest.” These are (1) enforce quotas, (2) privatize the resource, and (3) the users of the commons will spontaneously recognize their common interests and adopt prudent quotas themselves. That last occurs only under a set of restrictive conditions that sometimes do arise.

Then on page 431 we come close to striking gold: “Chief among the forces affecting political folly is lust for power, named by Tacitus as ‘the most flagrant of all passions.’ As a result of lust for power, Easter Island chiefs and Maya kings acted so as to accelerate deforestation rather than to prevent it: their status depended on their putting up bigger statues and monuments than their rivals. They were trapped in a competitive spiral.”

Ahhh. There at last. A “competitive spiral” is another name for a reinforcing feedback loop. This starts to get into the area of my analysis of the same problem, which hypothesizes that it is indeed a few key feedback loops of the political decision making process that are at the core of the cause of the problem.

But is Diamond’s insight transferable to today’s world? Do we have politicians competing for power with the equivalent of bigger statues? If we do, then Diamond has put his finger near the heart of why the problem is occurring.

Yes we do. We have politicians competing for supporters on the basis of who can tell the biggest believable false promise, who can provide the biggest amount of favoritism, and so on. There is little difference between modern politicians and the clan chiefs of Easter Island.

Over the last four years I’ve created an approach to helping to solve the environmental sustainability problem. This includes a formal simulation model of why modern civilization is unable to avoid self-destruction. The heart of the model is a Race to the Bottom Among Politicians. How that model works is much different and a bit deeper than what Diamond goes into in *Collapse*, but at least our analyses agree up to this point of departure. But my own model is another story. Let’s return to *Collapse*.

In the end Diamond’s answer to “Why Do Some Societies Make Disastrous Decisions?” does not go quite far enough. It only asks “Why?” a few levels deep, and then stops. It left me hanging, and waiting for enough whys to get to the bottom of the problem, which never came. Remember now, if you don’t go deep enough, you will never be able to solve the problem.

From the viewpoint of Kaizen, here is how deep the analysis in *Collapse* went:

Question 1: Why do some societies make disastrous decisions?

Answer: Because of failure of group decision making.

Question 2: Why does the group decision making process fail?

Answer: Because of a conflict of interest.

Question 3: Why does conflict of interest occur?

Answer: Because some people reason that they have more to gain by decisions that help themselves but harm others.

Question 4: Why do they reason that way?

Answer: Because they are trapped in a competitive spiral.

Question 5: Why does the competitive spiral occur?

Answer: Because leaders compete for power by seeing who can build the biggest statues.

So Diamond did go five levels deep! Normally that would be enough to solve the problem. But this is no ordinary problem. This is the global environmental sustainability problem, a problem so extraordinarily difficult it has defied solution for over 30 years.

Here is an example of how much further the analysis would need to go to get to the fundamental causes of the problem: (Yes, there is more than one “root” cause.)

Question 6: Why does that have relevance to today’s sustainability problem?

Answer: Because a politician is the same as a clan chief.

Question 7: What are today’s politicians competing for?

Answer: Who can provide the people with the biggest false promise, the biggest amount of favoritism, or the biggest false enemy, etc.

Question 8: Why does that work better than telling them the truth?

Answer: Because the size of a lie can be inflated. The size of a truth cannot.

Question 9: Why do lies work?

Answer: Because not all lies are detected. The mind cannot tell the difference between an undetected lie and the truth.

Question 10: Why are most political lies not detected?

Answer: Because the average person has a low ability to detect political deception, which has become quite sophisticated. The ability to detect political deception is somewhere around 20%.

Question 11: Why then do undetected lies gain a (corrupt) politician more supporters than a (virtuous) politician who tells the truth?

Answer: Because the corrupt politician has successfully inflated the amount of what their supporters expect them to deliver, while the virtuous politician has not.

Question 12: Why can’t this go on forever?

Answer: Because eventually the supporters of a corrupt politician will notice that the politician is not delivering what they promised, and/or because the side effects of favoritism began to cause widespread harm. This eventuality is so reliable that the Race to the Bottom is cyclic.

The emergent effect is all of the above causes a Race to the Bottom Among Politicians to appear. Those politicians who do not compete in it will lose out to those who do.

The advantage of the additional questions is that because we now know how the Race to the Bottom works in exquisite detail, we know where to best direct our solution efforts.

Perhaps Diamond sensed that he hadn’t gone deep enough when he wrote on page 436 that “Finally, even after a society has anticipated, perceived, or tried to solve a problem, it may still fail for obvious possible reasons: the problem may be beyond our present capacities to solve, a solution may exist but be prohibitively expensive, or our efforts may be too little and too late.”

The book is solid, valuable ground breaking work nevertheless. It lays down a substantial path all the way to a “competitive spiral” as a result of a “lust for power.” But for the reader to go any further, he or she is on their own.

## **Chapter 15 – Big Business and the Environment**

Here Diamond explains how the goals of business and society conflict. The issue is summarized on page 442, where he states “What makes money for a business, at least in the short run, may be harmful for society as a whole.”

This is what I call the principle that “The top strategy for all independent agents is to maximize the net present value of their competitive advantage.”

*Net present value* is what something in the future is worth today. It’s always worth less, because if you had what it’s worth today, you could take that money and invest it at interest. For example, at an interest rate of 10%, 85 cents today would be worth \$100.00 in 50 years. Conversely, a resource worth \$100.00 in 50 years, such as a tree, would only be valued by a business as worth 85 cents today, using the same interest rate of 10%.

Now you can see why the average business tends to value the future condition of the environment so lightly. They all compete on the basis of net present value, not future value. If a business values the future “correctly,” then it is at a competitive disadvantage, and will usually fail in the eternal struggle of survival of the fittest. This is another “competitive spiral” of the human system.

According to my analysis, the above principle is unchangeable. Any solution is going to have to work around it. Fortunately this looks possible.

Most of the chapter is full of details about the impact of business on the environment. It is descriptive material, and not too analytic or prescriptive.

Toward the end the chapter gets into efforts that have helped companies to behave more sustainably, such as certification programs. This is a very light treatment of this area, so it has little to offer when one’s analysis goes past why the problem is occurring and gets into how to solve it.

## **Chapter 16 – The World as a Polder: What Does It All Mean to Us Today?**

A *polder* is reclaimed land that is below sea level, such as the one fifth of the Netherlands that is below sea level. The metaphor is that “we’re all in the polders together,” and need to constantly keep the pumps working and the dikes in good repair, and all do this together.

This is the final chapter. It gets completely away from asking “Why?” and goes into a listing of the serious symptoms of the global environmental sustainability problem, and why the problem is important and cannot be wished away. Popular standard objections to solving the problem are listed and discussed.

To those who have not encountered it before, the treatment of “technology will solve our problems” on page 504 is good. It will not, of course.

Finally on page 514 Diamond asks “Are there any parallels between the past and present sufficiently close that the collapses of the Easter Islanders [and others] could offer any lessons for the modern world?”

One parallel is that “the best predictors of modern ‘state failures,’ –i.e., revolutions, violent regime change, collapse of authority, and genocide—prove to be measures of

environmental and population pressure...” An analysis shows this to be true. The implication is this correlation is scalable up to civilization as a whole.

On page 521 Diamond confesses that (italics added) “I’m a cautious optimist.... I acknowledge the seriousness of the problems facing us. If we don’t make a determined effort to solve them, and if we don’t succeed at that effort, the world as a whole within the next few decades will face a declining standard of living, or perhaps something worse. *That’s the reason why I decided to devote most of my career efforts at this stage of my life to convincing people that our problems have to be taken seriously and won’t go away otherwise.* On the other hand, we shall be able to solve our problems—if we choose to do so.” and “We don’t need new technologies to solve our problems.... We just need the political will to apply solutions already available.”

Which leads to the question, why don’t we have that political will? What is it in the human system that is causing that?

Happy reading,

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June 14, 2005  
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