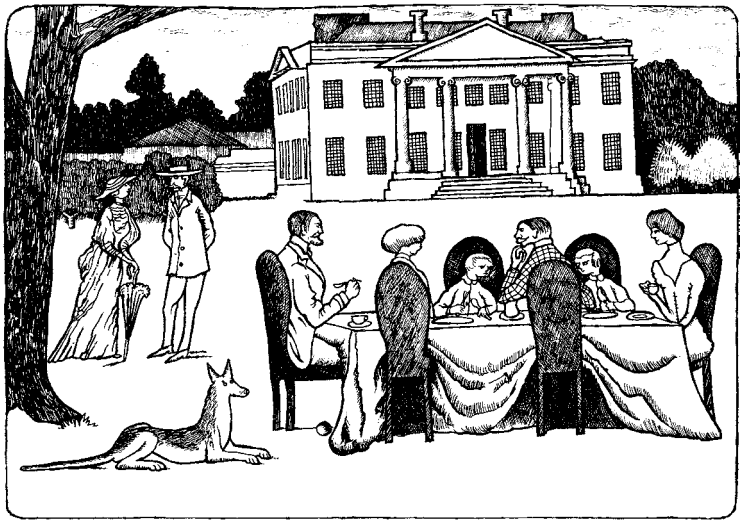
INTRODUCTION

Collapses in General



Collapse is a socially awkward subject. Serious men sometimes discuss it, in a spare moment or over drinks, in hushed tones. The topic is very rarely broached in mixed company, and hardly at all when there are children present. For certain specialists—scientists, engineers and, more recently, those working in finance—collapse is fast becoming the elephant in the room. The enforced silence causes these specialists much frustration, since it is becoming increasingly difficult for them, based on the data at their disposal, to formulate, in their own minds, a scenario that does not culminate in collapse. Others—businessmen, politicians, economists, social scientists, psychologists, educators—find such thinking overly negative.

The contrast between these two groups is a contrast between two radically different modes of thought. The first is trained to think in

measurable physical quantities and principles—systems theory, thermodynamics and so on. They investigate facts and the results cannot be positive or negative in and of themselves, only accurate or inaccurate. How these results apply to society is, most unfortunately, no more than a secondary consideration. To the second group, society remains at all times both the subject and the object; they hold it front and center and always view as secondary the physical considerations and principles, which they generally have not been trained to understand, and which they regard as a matter of opinion. To them, the topic of collapse is circumscribed by its direct and immediate effect on society—not the long-term reality of collapse, but the effect collapse as a topic of discussion will have on present society. Seen in this light, the subject seems overly negative, disturbing, distressing, depressing, defeatist—rather than inspiring, comforting, enlightening, uplifting or empowering.

There is one very strong point of agreement between the two kinds of specialists. They both tend to agree that dwelling on the topic of collapse is not conducive to furthering their careers. Those who do mention it tend to leaven their utterances with phrases such as "unless we," or "we must"—making sure to recast collapse as something that is either preventable or avoidable. About the only people who are capable of discussing collapse unguardedly, without looking over their shoulders, are retired specialists and tenured faculty, and the latter only if their research is not dependent on grants. At the opposite extreme are those who have discovered that collapse is a growing market niche and cater to it with all manner of products and services, from survivalist bunkers and equipment to wilderness survival training to books that promote financial instruments to hedge against collapse. Somewhere in the middle are people who work within communities that are, in fact, collapsing, and who do not have the luxury of ignoring this reality and its social and medical consequences. They often find themselves conflicted by the cognitive dissonance of the shocking daily reality they must confront and the compulsory optimism they must simulate in order to remain employed.

At a more personal level, the topic of collapse can be corrosive to marriage and family life. A common pattern is for the husband to do some reading and become convinced that collapse is underway. Suddenly radicalized by this dramatic shift in his worldview, he comes to believe that extraordinary preparations are called for as a matter of the

highest priority. Such preparations may include prematurely abandoning one's career; acquiring a homestead, possibly in a foreign land; cashing out of investments, retirement funds and other savings in order to acquire tools, supplies and other inventory; learning to farm, garden and hunt; homeschooling his children; leaving behind any friends or acquaintances who remain skeptical on the topic of collapse; and so on and so forth. Meanwhile, the wife wants to continue living the life she had always wanted: living close to her friends and family, vacationing in the tropics in wintertime, shopping at fashionable boutiques, sending the children to private schools and summer camps and entertaining other successful couples at home. To the husband, collapse becomes an overarching consideration, preparing for the family to survive it of paramount importance; to the wife it is an unbreachable topic of conversation compulsively reintroduced by her increasingly odd, alienated and socially embarrassing husband. She begins to wonder whether she married the right man. After all, somebody's husband *always* does well no matter *what* happens. To a woman, surviving collapse can seem as simple as not worrying about it while making sure to avoid marrying a loser. This is a conservative evolutionary strategy, and most of the time it works. How well it will work during the collapse of global industrial civilization—well, we'll just have to see.

It is something of a pattern that the male concerns himself with the big picture, such as who to elect president, while the wife sweats the little stuff, such as what washing machine to buy or where to send the children. But there are instances in which this pattern is reversed and the wife becomes collapse-aware while the husband chooses to remain in denial. In either case, in many families one spouse gets the picture and is prepared to make major changes in the living arrangement but the other is non-receptive. The constraints multiply if they have children, because living arrangements that are likely to become necessary adaptations post-collapse look substandard to a pre-collapse mindset. For instance, in many places in the United States, bringing up a child in a place that lacks electricity, central heating or indoor plumbing may be equated with child abuse, and authorities rush in and confiscate the children. (In the course of collapse, until these same authorities become overwhelmed, they will try to evacuate entire families to emergency refugee camps rather than let them survive and adapt to life without electricity, central heating, indoor plumbing, government services

or police protection, even in parts where such a lifestyle was considered perfectly normal as little as a century ago.) If there are grandparents involved too, misunderstandings multiply.

Another, even greater chasm exists at the social level, between collapse as a topic of dispassionate, academic discussion peppered with terms from systems theory and other lofty branches of higher learning and collapse as personal experience—lived by those who have already gone through it to one extent or another. During its early stages, collapse affects the most vulnerable: the poorest, least protected, least privileged communities, families and individuals. Collapse dispossesses industrial and service personnel even while educated professionals may, for a time, do better than ever. In its early stages collapse may seem like a morality play, a story of punishing the least capable and the least prepared while rewarding the diligent and the successful—to the delight of social Darwinists dreaming that they, being the fittest, will survive. But their delight is sure to be short-lived: like a flood that inundates the lowlands first, then reaches the higher ground and washes away the hills, collapse eventually reaches everybody, and just as in a real flood, what makes survival possible is cooperation, not competition. People who see collapse as a lofty pursuit for themselves and a dire experience for all those other, unlucky persons, those who are less capable and less prepared, simply need to await their turn—then they too will be humbled.

All of this makes it a rather tall order to expect most people to take any significant steps to do anything at all about collapse as families, communities, societies or nations. Social inertia is an awesome force and many people are almost genetically predisposed to not want to understand that collapse is inevitable. Many others understand this truth on some level but refuse to act on it. When they are touched by collapse, they take it personally or see it as a matter of luck. They see those who prepare for collapse as eccentrics; some may even consider them to be dangerous subversives. This is especially likely to be the case with regard to people in positions of power and authority, because they are not exactly cheered by the prospect of a future that has no place for them.

Certain individuals—unmarried men, mostly—have perhaps the greatest freedom of action in preparing for collapse. There seems to be a certain personality type that is more likely to survive collapse unscathed, physically or psychologically, and be able to adapt to the new

circumstances. Survivors of shipwrecks and similar calamities share several common traits. A certain degree of indifference or detachment is definitely helpful, including indifference to suffering. Possibly the most important characteristic, more important than skills or preparation or even luck, is the will to survive. Next is self-reliance: the ability to persevere in spite of loneliness and lack of support from anyone else. Last on the list is unreasonableness: the sheer stubborn inability to surrender in the face of seemingly insurmountable odds, opposing opinions from one's comrades or even force.

This should not come as a complete surprise, for there are two distinct components to human nature: the social and the solitary. While most people are strictly social, with all of their motivations, norms, constraints and rewards deriving from their interactions with others, there are also quite a few loners, people who motivate themselves, derive their rewards directly from nature and whose only constraints are self-imposed. The solitary part of human nature is definitely the more highly evolved, and humanity has surged forward through the efforts of brilliant loners and eccentrics. Their names live on forever precisely because society was unable to extinguish their brilliance or thwart their initiative through social inertia. On the other hand, our social instincts are atavistic and result far too reliably in mediocrity and conformism. We evolved to live in small groups of a few families, small enough to easily accommodate a few brilliant eccentrics, and our recent experiments that have gone beyond that limited scope seem to rely on herd instincts that may not even be specifically human. When facing imminent danger, large groups of humans have a tendency to panic and stampede, and on such occasions people regularly get trampled and crushed underfoot: a pinnacle of evolution indeed! And so, in fashioning a survivable future, we would do well to put our emphasis on individuals and small, cooperative groups rather than on larger entities, be they existing, pre-collapse communities, regions, nations or humanity as a whole.

Those who feel the need to be inclusive and accommodating, to compromise and to seek consensus, need to understand the awesome force of social inertia. It is an immovable, crushing weight. "We must take into account the interests of society as a whole" implies that "We must allow ourselves to remain blocked by other people's unwillingness or inability to make drastic but necessary changes; to change who

they are." When it comes to larger groups, any meaningful discussion of collapse is usually off the table. The topics under discussion center around finding ways to perpetuate the current system through alternative means: renewable energy, organic agriculture, starting or supporting local businesses, bicycling instead of driving and so on. None of these things is bad, but focusing on them ignores the bigger question of the radical social simplification that is required. It seems unlikely that we can achieve this radical simplification in a series of controlled steps; that would be like asking a demolition crew to demolish a building brick by brick, one floor at a time, instead of following the standard procedure of mining it, blowing it up and bulldozing and hauling away the debris, then laying down a new foundation. It seems far more reasonable to expect that social complexity will be demolished in the traditional quick and dirty fashion rather than dismantled gradually and deliberately.

What is collapse?

This book is about collapse. Not whether collapse will occur or when, but rather, what it looks like, what to expect and how we should behave should we wish to survive it. Such information may be of minimal interest to hardcore collapse skeptics. However, should any of them wish to further educate themselves on this subject, here are some pointers to resources and avenues of approach that should make the process simpler, though by no means easier, since the main impediment to grasping its significance is not intellectual but psychological.

To make the case for the imminent collapse of global industrial civilization, it is necessary to prove two things. The first is to account for the Earth's finite endowment of fossil fuels, metal ores, other industrial and agricultural inputs, fresh water and fertile soil, and to demonstrate that many of these resources are either past their all-time peak of production or will soon achieve it. The second is to prove that, as these resources become too scarce to allow the global industrial economy to grow, the result will be collapse rather than a slow and steady deterioration that could continue for centuries without reaching any conclusive, historical endpoint.

The first task has been carried out by a number of people, but a particularly good book on the subject is Richard Heinberg's *Peak Everything*,[1] which calmly lays out the facts for why the twenty-first century

is a century of declines in energy, agricultural output, stable climate and population. While Heinberg weaves together a convincing story, Chris Clugston, in his 2011 self-published book *Scarcity*,[2] takes a more direct approach. Clugston undertook a thorough study of US government data on nonrenewable natural resources, focusing on the raw materials needs and primary energy sources of industrialized economies. In his 2012 update, Clugston shows that only one essential industrial input—bauxite for aluminum smelting—now remains sufficiently abundant to provide for continued economic growth. Consequently, the rate of improvement in the global material living standard (measured as per capita GDP) has slowed from around 2 percent per year during the second half of the twentieth century to just 0.4 percent this decade, and is poised to turn negative. Based on Clugston's projections, the increasing scarcity of the nonrenewable resources required to maintain industrial civilization will most certainly trigger a global societal collapse by mid-century.

While the first task is a relatively simple matter of laying out the numbers, which are available from reputable sources that are difficult to argue against and can be grasped by anyone with a head for numbers and a general understanding of the functioning of industrial economies, the second task is much harder, because the only way to address it is through mathematical models. The first of these models is the World3 model used in the 1972 book *Limits to Growth*. World3 is a relatively simple model that ran on a computer less powerful than a smartphone and included just five variables: world population, industrialization, pollution, food production and resource depletion. This model predicted economic and societal collapse by mid-twenty-first century. The 2004 *Limits to Growth: The 30-Year Update*[3] confirmed that, thirty years later, the initial predictions are still in excellent agreement with reality. Though your instinct may be to mistrust the predictive abilities of mathematical models in general, this wariness should be tempered somewhat when the model in question is shown to have been correct decades later.

Mathematical models can be fearsomely complex, requiring many hours of supercomputer time for a single run and able to defy anyone's attempt to understand them at a sitting. Such models inspire skepticism by their sheer complexity: with so many formulas and parameters, there has to be a mistake in there somewhere! Luckily, modeling

collapse, at the simplest and most intuitive level, does not require such complexity, thanks to the Seneca Cliff model proposed by Professor Ugo Bardi of the University of Florence in Italy. Bardi's goal was to create a "mind-sized" model that could be easily understood at a glance by someone even slightly conversant with mathematical modeling. Bardi got the inspiration for the name of his model from a quote by the Roman philosopher Seneca: "It would be some consolation for the feebleness of our selves and our works if all things should perish as slowly as they come into being; but as it is, increases are of sluggish growth, but the way to ruin is rapid."[4]

Bardi started with a very simple model of resource use and depletion with just two variables: resources and capital. Resources are transformed into capital at a rate that is proportional to both the amount of remaining resources and the amount of capital. Also, capital decays over time. This model can be run via a simple spreadsheet or by using a very short and simple computer program, and the result is a symmetrical bell curve: the amount of capital, representing the size of the economy, grows gradually, reaches a peak, and then declines just as gradually, as the resource base is depleted. (The bell curve is ubiquitous, serves as the basis of probability and statistics, and is also known as the Hubbert Curve, which is used to model oil depletion.) Bardi then added a third variable to the model, which he labeled "pollution," and which represents the overhead of running an industrial civilization: not just pollution but also its infrastructure, its bureaucracy and so on. Pollution represents all that has to exist for an industrial economy to function but does not contribute to its productive capacity. A fraction of capital, proportional to both the amount of capital and the size of this third variable, is diverted to it. Just like capital, it also decays over time. This model produces an asymmetric, lopsided curve, in which the upward slope is gradual but the downward slope is steep and cliff-like. In this model, capital does not gradually decay as resources run short; it collapses.

To appreciate why this is so at an intuitive level think of the infrastructure of industrial civilization: its highways and bridges, its oil terminals, refineries and pipelines, its airports, seaports, electrical grid and so on. As the economy expands, all of these have to expand alongside it, and maintain reserve capacity to avoid bottlenecks, shortages, traffic jams and blackouts. But when resource scarcity forces the economy to

start contracting, they cannot contract with it, because they have all been built at a certain scale that cannot be reduced retroactively, and have been designed to be efficient and realize economies of scale only when utilized at close to full capacity. Even as they are used less, their maintenance costs remain the same, swallowing up an ever-larger portion of the economy. At some point maintenance costs become unbearable and maintenance is foregone. Shortly thereafter they become nonfunctional, and with them the rest of the industrial economy.

Further insight into the mechanics of collapse can be gained by looking at the role of finance in the day-to-day functioning of the global economy, because it expands by systematically betting on future growth—borrowing from the future, which is assumed to be more prosperous than the present except for minor, temporary setbacks. This borrowing is used not just to finance expansion but to finance all of the shipments that make up global trade: every international shipment starts with a letter of credit issued by a commercial bank in one country and honored by another commercial bank in another country. If the economy stops growing for an extended period of time, these bets on future growth no longer pay off, a large number of loans turn into bad, nonperforming loans and many banks become insolvent and are no longer able to issue letters of credit, while other banks, though still solvent, no longer want to take the risk of honoring their letters of credit. Global trade stops, which in turn disrupts global supply chains, causing shortages of components and other industrial inputs, which then halt manufacturing processes. Before too long, the global economy passes a point of no return beyond which there can be no recovery, because the supply networks and trading relationships that held it together have broken down.

All of these explanations for why collapse is exceedingly likely may be compelling, but for many people they are about as taxing on the brain as the subject of collapse itself. Thankfully, there is also a third way, which is, as time goes on, turning out to be far more productive in informing people about collapse than either the resource numbers or the mathematical models: personal experience. Entire countries, such as Greece, are finding themselves in the throes of what can quite uncontroversially be labeled as financial, commercial and political collapse: there are runs on banks as people try to cash out and expatriate their savings; pharmacies run out of medicines and many other imports

run short; nationally elected officials are replaced with political appointees whose candidacies are vetted by the country's creditors. In other countries, such as the United States, such effects are not yet felt, but many people are nevertheless starting to recognize that their future will not resemble the past: younger people realize that their college degrees will not lead to a career or even to a good, permanent job; older people realize that they will not be supported in retirement; long-term unemployed people realize that their careers have ended prematurely. Many of these people already understand that something has gone terribly wrong, but most of them are not yet aware of just how thorough a transformation their country is about to undergo.

When will collapse occur?

Supposing you are convinced that collapse is underway, a natural next question to ask is, When is it going to happen? Unfortunately this question, reasonable though it is, has no definitive answer. You see, predicting *that* something is going to happen is a lot easier than predicting *when* something will happen. Suppose you have an old bridge: the concrete is cracked, chunks of it are missing with rusty rebar showing through. An inspector declares it "structurally deficient." This bridge is definitely going to collapse at some point, but on what date? That is something that nobody can tell you—neither the inspector, nor anyone else. If you press him for an answer, he might say something like, "If it doesn't collapse within a year, then it might stay up for another two. And if it stays up that long, then it might stay up for another decade. But if it stays up for an entire decade, then it will probably collapse within a year or two of that, because, given its *rate of deterioration*, at that point it will be entirely unclear *what is holding it up*."

You see, the timing estimates are inevitably subjective and, if you will, impressionistic, but there are objective things to pay attention to: how much structure is left (given that large chunks of concrete are continuing to fall out of it and into the river below) and the rate at which it is deteriorating (measurable in chunks per month). Most people have trouble assessing such risks. There are two problems: the first is that people often think that they would be able to assess the risk more accurately if they had more data. It does not occur to them that the data they are looking for are not available for the simple reason that they do not exist. And so they incorporate more data, hoping that these are relevant, but only making their estimate even less accurate.

The second problem is that people assume they are playing a game of chance, and that it's a fair one; something Nassim Nicholas Taleb, author of *The Black Swan*,[5] calls the "ludic fallacy." If you drive over a structurally deficient bridge every day, it could be said that you are gambling with your life; but are you gambling, exactly? Gambling normally involves games of chance: a roll of the dice, a flip of the coin, unless someone is cheating. Fair games form a tiny, insignificant subset of all possible games, and they can only be played in contrived, controlled, simplified circumstances, using a specially designed apparatus that is functioning perfectly. Suppose someone tells you that he just flipped a coin ten times and all ten were heads? What is the probability that the next flip will be heads too? If you think 50 percent, then you are discounting the very high probability that the game is rigged. And this makes you a sucker.

Games played directly against nature are never fair. You could say that nature always cheats: just as you are about to win the jackpot, the casino gets hit by an asteroid. You might think that such unlikely events are not significant, but it turns out that they are: Taleb's black swans rule the world. Really, nature doesn't so much cheat as not give a damn about your rules. And these rules are all you have go by: a bridge is sound if it corresponds to the picture in the head of its designer. The correspondence is almost perfect when the bridge is new, but as it ages a noticeable divergence takes place: cracks appear and the structure decays. At some more-or-less arbitrary point it is declared unsafe. But there is no picture in anyone's head of it collapsing, because, you see, it wasn't designed to collapse; it was designed to stay up. The information as to when it will collapse does not exist. There is a trick, however: you can observe the rate of divergence; when this goes from linear to exponential (that is, begins to double) then collapse is not far off, and you might even be able to set an upper limit on how long it will take. If the number of cement chunks falling out of your bridge keeps doubling, you can compute the moment when every last piece of the bridge will be in the river, and that is your upper bound.

Still, your forecast will be subjective (or, if you like, based on your luck as a forecaster) because you are still just playing the odds. If you find that the deterioration in your bridge is linear (one chunk falls out per month) then you extrapolate that it will remain linear; if it is exponential (twice as many chunks as in previous month) then you extrapolate that it will remain exponential, and, if you are lucky, it will.

But the odds of it remaining one or the other are strictly in your own mind: they are not predictable but subjective. Calling them "random" or "chaotic" doesn't add any meaning: the information you are looking for simply does not exist.

To summarize: it is possible to predict that something will happen with uncanny accuracy. For example, all empires eventually collapse, with no exceptions; therefore, the USA will collapse. There, I just did it. But it is not possible to predict when something will happen because of the problem of missing information: we have a mental model of how something continues to exist, not of how it unexpectedly ceases to exist. However, by watching the rate of deterioration, or divergence from our mental model, we can sometimes tell when the date is drawing near. The first type of prediction—that something will collapse—is extremely useful, because it allows you to avoid putting at risk that which you cannot afford to lose. But there are situations when you have no choice; for instance, if you are born into an empire that's about to collapse. And that is where the second type of prediction—that something will collapse real soon—comes in very handy, because it tells you that it may be time to pull your bacon out of the fire.

Let me stress again: the process of coming up with such predictions is subjective. You might reason it out, or you might base it on a certain tingling sensation in the back of your neck. Still, people like to theorize: some declare that the events in question are random, or chaotic, and then go on to formulate mathematical models of randomness and of chaos. But the timing of large-scale, "improbable" events is not random or chaotic, it is unknown. With regular, small-scale events, statisticians can cheat by averaging them over. That is useful if you are selling insurance—insuring against rare events you can foresee. Of course, a large-scale event can still wipe you out by putting your reinsurer/underwriter out of business. We have fire insurance and flood insurance (not so much any more; in the US flood is such a bad risk that it is now underwritten directly by the taxpayers) but there can be no collapse insurance, because there is no way to objectively estimate the risk.

Plugging in everyone's favorite Yogi Berra quote: "Making predictions is hard, especially if they are about the future." Well, I beg to differ: making predictions about the past is just as difficult. The USSR collapsed unexpectedly in 1991, taking the "experts" by surprise. The root cause of the collapse remains veiled in mystery; the reason for

the exact timing remains a complete mystery. Expert Kremlinologists were geared up to bet on minor power shifts within the Politburo, expert economists were entirely convinced about the superiority of free-market capitalism over a planned socialist economy, expert military strategists could debate the merits of the Strategic Defense Initiative (there aren't any), but they were all blindsided when the whole Soviet thing just folded up and blew away. Similarly, most political experts in the US were confident in their estimation of the odds that Obama would or would not be reelected in November 2012; what they couldn't give you were the odds that the elections wouldn't be held and that nobody would be elected president. Mind you, these odds were not zero, and we can be sure that such a day will come; we just don't know when.

What are the stages of collapse?

Let us suppose that you are convinced that collapse is going to happen, by mid-century at the latest. You will still need to come to terms with it, to get over the shock, terror, grief, fear and other unhelpful emotions. Elizabeth Kübler-Ross defined the five stages of coming to terms with grief and tragedy as denial, anger, bargaining, depression and acceptance, and applied them quite successfully to various forms of catastrophic personal loss: death of a loved one, sudden end to one's career and so forth. Several thinkers, notably James Howard Kunstler and John Michael Greer, have pointed out that the Kübler-Ross model is also quite terrifyingly accurate in reflecting the process by which society as a whole (or at least the informed and thinking parts of it) is reconciling itself to the inevitability of a discontinuous future, with our institutions and life-support systems undermined by a combination of resource depletion, catastrophic climate change and political impotence. But so far little has been said specifically about the finer structure of these discontinuities. Instead, we find a continuum of subjective judgments, ranging from "a severe and prolonged recession" (the prediction we most often read in the financial press) to Kunstler's "Long Emergency"[6] to the ever-popular "Collapse of Western Civilization," painted with an ever-wider brushstroke.

For those of us who have already gone through all of the emotional stages of reconciling ourselves to the prospect of social and economic upheaval, it might be helpful to have a more precise terminology that goes beyond such emotionally charged phrases. Defining a taxonomy

of collapses might prove to be more than just an intellectual exercise: based on our abilities and circumstances, some of us may be able to specifically plan for a certain stage of collapse as a temporary, or even permanent, stopping point. Even if society at the current stage of socio-economic complexity will no longer be possible, and even if, as Joseph Tainter points in *The Collapse of Complex Societies*,[7] there are circumstances in which collapse happens to be the correct adaptive response, it need not automatically cause a population crash, with the survivors disbanding into solitary, feral humans dispersed in the wilderness and subsisting miserably. Collapse can be conceived of as an orderly, organized retreat rather than a rout. It may even be useful to think of collapse as a transition: a transition that has already been planned for us (so no further transition planning activities are needed) and will consist of the collapse of finance, consumerism and politics-as-usual, along with the collapse of the societies and cultures that are entirely dependent on them.

In an effort to introduce a helpful taxonomy of collapses, I have defined my five stages of collapse to serve as mental milestones as we gauge our own collapse-preparedness and see what we can do to improve it. Rather than tying each phase to a particular emotion, as in the Kübler-Ross model, the proposed taxonomy ties each of the five stages to the breaching of a specific level of trust, or faith, in the status quo. Although each stage causes physical, observable changes in the environment, these can be gradual, while the mental flip is generally quite swift. It is something of a cultural universal that nobody (but a real fool) wants to be the last fool to believe in a lie.

Stage 1: Financial collapse. Faith in "business as usual" is lost. The future is no longer assumed to resemble the past in any way that allows risk to be assessed and financial assets to be guaranteed. Financial institutions become insolvent; savings are wiped out and access to capital is lost.

Stage 2: Commercial collapse. Faith that "the market shall provide" is lost. Money is devalued and/or becomes scarce, commodities are hoarded, import and retail chains break down and widespread shortages of survival necessities become the norm.

Stage 3: Political collapse. Faith that "the government will take care of you" is lost. As official attempts to mitigate widespread loss of access to commercial sources of survival necessities fail to make a difference, the political establishment loses legitimacy and relevance.

Stage 4: Social collapse. Faith that "your people will take care of you" is lost, as local social institutions, be they charities or other groups that rush in to fill the power vacuum, run out of resources or fail through internal conflict.

Stage 5: Cultural collapse. Faith in the goodness of humanity is lost. People lose their capacity for "kindness, generosity, consideration, affection, honesty, hospitality, compassion, charity." Families disband and compete as individuals for scarce resources. The new motto becomes "May you die today so that I can die tomorrow."

I have taken the list of human virtues from Colin Turnbull's *The Mountain People*, which I discuss in detail in the case study on the Ik, which follows the chapter on cultural collapse. The motto is from Alexander Solzhenitsyn's *The Gulag Archipelago*.

As we can easily imagine, the default is cascaded failure: each stage of collapse can easily lead to the next, perhaps even overlapping it. In Russia following the Soviet collapse, the process was arrested at Stage 3: there was considerable trouble with ethnic mafias and even some warlordism, but government authority won out in the end.

While attempting to arrest collapse at Stage 1 or Stage 2 would most likely be a waste of energy, it is probably worth everyone's while to dig in their heels at Stage 3, definitely at Stage 4, and it is quite simply a matter of physical survival to avoid Stage 5. In certain localities—those with high population densities, as well as those that contain dangerous nuclear and industrial installations—avoiding Stage 3 collapse is rather important, to the point of inviting international peacekeepers or even foreign troops and governments to maintain order and avoid disasters. Other localities may be able to prosper indefinitely at Stage 3, and even the most impoverished environments may be able to support a sparse population subsisting indefinitely at Stage 4.

Although it is possible to prepare directly for surviving Stage 5, this seems like an altogether demoralizing thing to attempt. Preparing to

survive Stages 3 and 4 may seem somewhat more reasonable, while explicitly aiming for Stage 3 may be reasonable if you plan to make a career of it. Be that as it may, I must leave such preparations as an exercise for the reader. My hope is that these definitions of specific stages of collapse will enable a more specific and fruitful discussion than the one currently dominated by such vague and ultimately nonsensical terms as "the collapse of Western civilization."