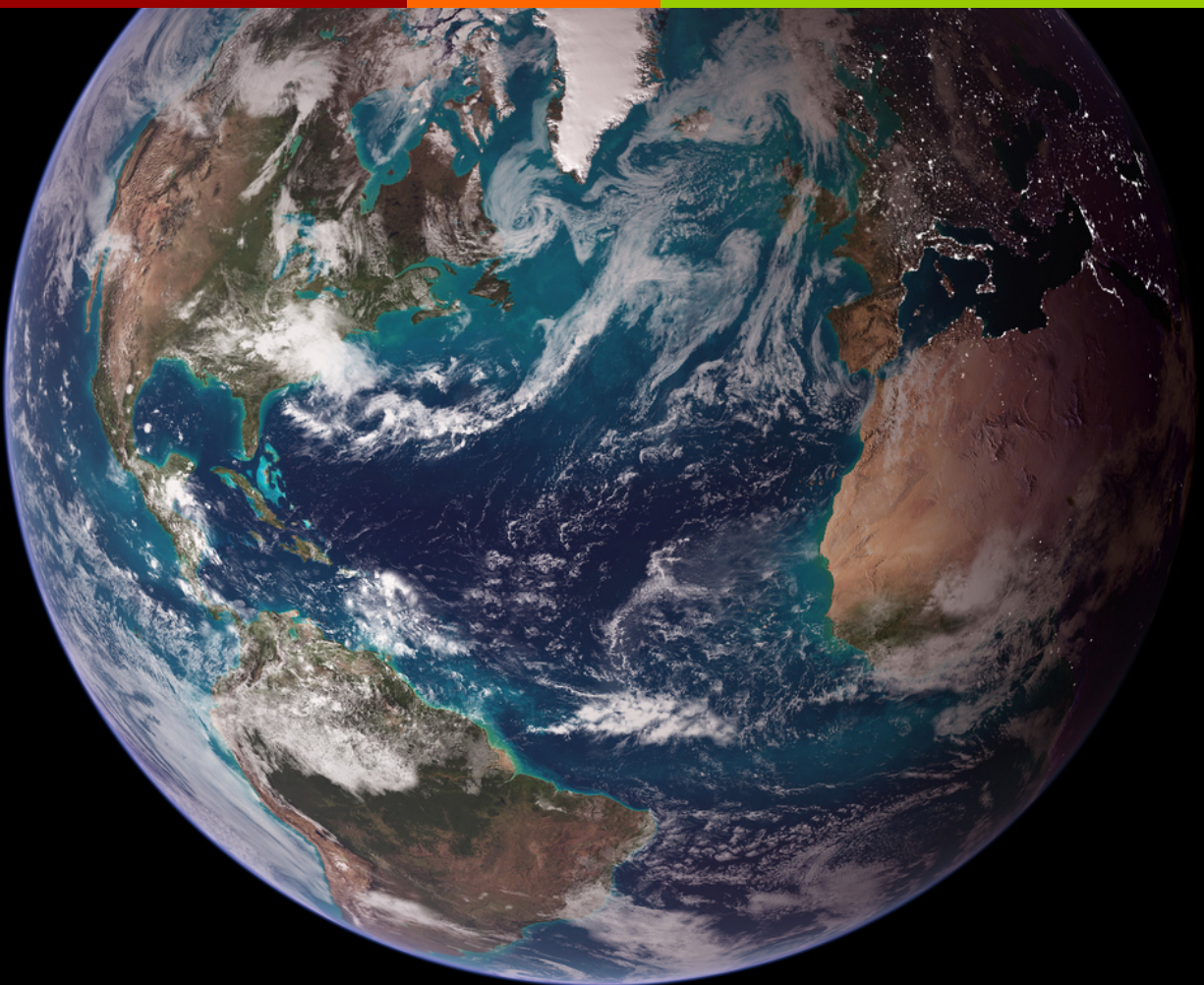


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Behaviors That Can Save Us

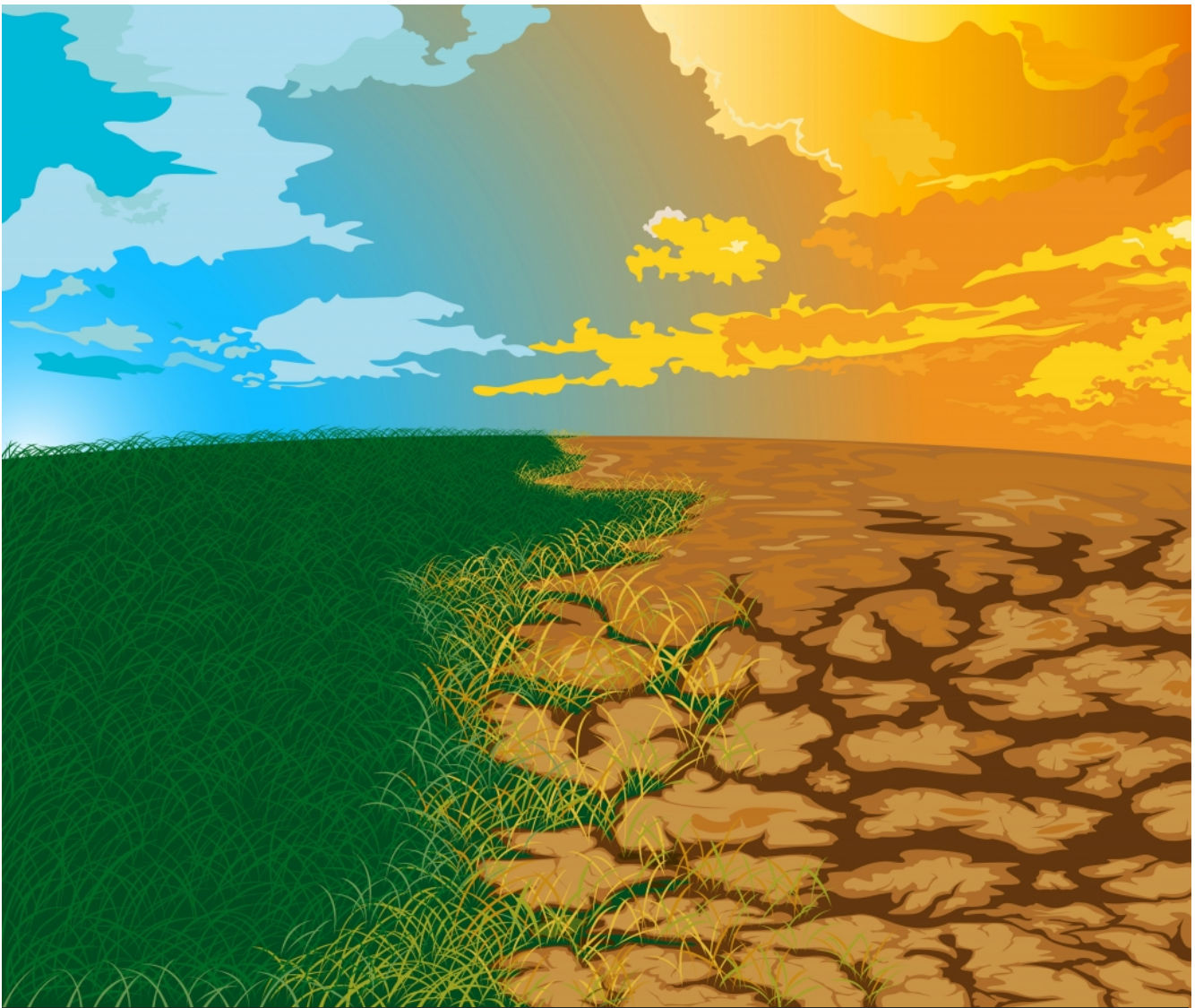
The Social Psychology
of Planetary Survival



Chris Hoffman

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Three Behaviors That Can Save Us: The Social Psychology of Planetary Survival

A White Paper
by Chris Hoffman
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*I could not have written this without the hard work of many people.
I am grateful to all my sources. Please see the references at the end of the booklet.*

Executive Summary

Solution boils
down to three
key, scalable
behaviors

The convergence of global climate change, resource depletion, and the ballooning of human population has brought us to the brink of the collapse of civilization. Many suggestions have been made about how to avert this catastrophe. Many positive efforts are underway. A behavioral analysis suggests that the behavioral changes needed boil down to a simple list of three. When faced with a choice, we should:

1. Choose the low footprint / high equity option
2. Choose prosperity rather than growth
3. Choose that which maintains and restores ecosystems

These are the behaviors that, if widely enacted, would save us.

This paper explores the meaning of, and the rationale for, these three behaviors. The factors that can either hinder or facilitate the enactment of these behaviors are analyzed at three levels – personal, social, and structural – with each level considered along two dimensions: the motivation for change and the ability to change. The analysis is intended to be useful to anyone wanting to take action to improve our situation.

To achieve the scale of changes necessary for survival, we will need changes at the structural level. Two of the most important structural changes are an improved feedback mechanism to replace the GDP and a full-cost economic mechanism such as tax neutral tax shifting related to carbon. In order to achieve structural changes we will need changes at the social level related to social norms and social linkages. And to achieve those we will need changed behavior at the personal level. When supported by social norms, individuals need to feel the needed changes are both important and urgent and to believe they can take effective action. This paper also provides examples and ideas for action at all levels.

Our “wicked problem”

The convergence of:

- Climate disruption
- Population growth
- Resource depletion

Introduction

Like all of us I have an uncertain amount of time left to me in this life. Wanting to make the best use of my time and efforts, I have been analyzing our world situation.

Many recommendations have been made about how to solve our global predicament, recommendations that range from changing policy to changing a light bulb. My background is in psychology and systems change. So rather than focusing on policy or technology, I focus here on behavior. I ask: what are the specific behaviors that, if widely enacted, would move us in the right direction. I think this question boils the problem down to its essence.

The Scope of the Predicament: A Wicked Problem

The essence of our predicament is the convergence of several trends, each of which in and of itself would be a difficult problem to solve. Global climate change (perhaps more accurately, climate disruption) threatens the existence of civilization as we’ve known it. Global population is ballooning. Ecosystems and biological diversity are collapsing. The vast oceans are sick and in decline. And meanwhile we are running out of key resources on a finite planet.

These trends have been well documented.
^{1,2,3,4,5,6,7,8,9,10,11,12,13,14}

We inhabitants of the planet Earth are all in the same boat when it comes to the Earth’s atmosphere, climate, and global resources. The boat is on the verge of sinking.¹⁵

The signals are ominous as I write this.
And probably by the time you read this the news will be worse.

Millions of people around the world are fed by "food bubbles," artificially high levels of food production that could drop suddenly at any moment, triggering food price spikes, inciting civil unrest, and swelling the ranks of the world's hungry. Rising food prices in early 2011 are approaching the 2007-08 price spike that led to a dramatic jump in the number of hungry people around the world. As over-pumping depletes aquifers and increasingly extreme weather events destroy crops, it becomes ever more likely that food is the weak link that could bring down our global civilization

- Earth Policy Institute¹⁷

Human activity now dominates 43 percent of Earth's land surface and affects twice that area.¹⁶ One-third of all available fresh water is diverted to human use. A full 20 percent of Earth's net terrestrial primary production, the sheer volume of life produced on land every year, is harvested for human purposes. Extinction rates compare to those recorded during the demise of dinosaurs¹⁸ and average temperatures will likely be higher in 2070 than at any point in human evolution.

In other words, the world's whole climate could suddenly tip toward catastrophe.

One possible scenario for catastrophe would be the complete melting of the Arctic ice cap, which would release massive amounts of the powerful greenhouse gas methane. This could result in a positive warming feedback loop that would render all our other efforts at stopping climate change fruitless.^{19,20}

Factors of the Predicament

One way to think about the predicament that I have found helpful is a mathematical expression:

$$I = P \times A \times T$$

This says that the impact (I) of human activity is a product of the size of the population (P) multiplied by its level of affluence (A) in terms of income per person and multiplied by a technology factor (T) in terms of the impact associated with each dollar we spend.²¹

If we want to limit our Impact on the planet and want at the same time to maintain or increase our level of Affluence, we must either reduce our Population or increase the efficiency of our Technology. Given that our Population is currently growing very rapidly, and assuming that we don't want to lower our Affluence, we're left with the option of increasing the efficiency of our Technology.

Factors of our Impact (I) on the Planet:

- Population (P)
- Goods & services we need or think we need (A – "affluence")
- How efficiently we convert resources into those goods & services (T – "technology")

The world is too much with us; late and soon,
 Getting and spending, we lay waste our powers;
 Little we see in Nature that is ours;
 We have given our hearts away, a sordid boon!
 This Sea that bares her bosom to the moon,
 The winds that will be howling at all hours,
 And are up-gathered now like sleeping flowers,
 For this, for everything, we are out of tune.

- William Wordsworth

(circa 1802, at the beginning of the industrial revolution)

One other option, to be discussed later, is to redefine Affluence so it doesn't imply "getting and spending." For now, when I refer to Affluence I mean Affluence as mediated by material consumption.

Efficiency Can Help, But By Itself Is Insufficient

Improving the efficiency (T) of our technology can definitely contribute to reducing our impact on the world while maintaining or improving our material affluence. For example, the amount of coal or oil converted into electricity to power one standard Edison bulb would power four compact fluorescent bulbs or at least six LED bulbs.

But efficiency alone won't get us to where we need to be. In fact, without other changes, it can make matters worse. Early in the industrial revolution the English economist William Jevons observed that technological improvements that increased the efficiency of coal use actually, and somewhat counter-intuitively, led to an increase consumption of coal.²²

In essence, the Jevons paradox says that in addition to reducing the amount of a

resource needed for a given use, improved efficiency lowers the relative cost of using a resource, which tends to increase the quantity of the resource demanded, potentially counteracting any savings from increased efficiency. Additionally, increased efficiency accelerates economic growth, further increasing the demand for resources. The Jevons paradox occurs when the effect from increased demand predominates, causing resource use to increase.^{23,24}

One example of the Jevons paradox is the ubiquity of color televisions. In the early days of television, TV sets were expensive and color TV's especially so. If a family owned a TV at all, it usually had only one. Now people often own several TV sets and TV screens appear in elevators and on top of gas pumps. Another example is the increased efficiency and lowered cost of air conditioners, making them widely available for residences in addition to the movie theatres and big department stores where they first appeared. In the United States, we now use roughly as much electricity to cool buildings as we did for all purposes in 1955.

Just to keep pace with growth in Population and Affluence, today's car should be getting at least 250 miles per gallon.

This is not to suggest that we should halt technological progress, nor that developing countries should remain locked into their current level of material affluence. It is just to say that technology alone won't get us to where we need to be.

Swamped by Population Driver

The biggest driver of impact is population (P). We need to reduce our global population. It is going to be reduced in any event. Our only choice is whether we want to have it reduced by war, starvation, and disease or by wise choices, wise policy, and education. I would choose the latter options.

Several recent studies show that Earth's resources are enough to sustain only about 2 billion people at a European standard of living.²⁵ We are currently at about 7 billion and growing. As Cornell University professor David Pimentel and colleagues put it: "Does human society want 10 to 15 billion humans living in poverty and malnourishment or one to two billion living with abundant resources and a quality environment?"²⁶

Growth creates such large problems that, like the Red Queen in *Alice and Wonderland*, we have to run as fast as we can just to keep up.

The world population was approximately 2 billion in 1930. It reached approximately 7 billion in 2011. In order *simply to keep up with population growth*, our efficiency of use of resources would have to have improved by 350%. In 1930, an automobile got about 25 – 30 miles per gallon. *Just to keep pace with population growth*, today's car should be getting at least 87.5 miles per gallon. The number of cars on the road in the U.S. in 1930 was about 23 million. Today it is at least 10 times that. That multiplier of 10 is a result of both Population growth and growth in

Affluence (more people own cars and people own more cars). *So just to keep pace* with growth in Population and Affluence, today's car should be getting at least 250 miles per gallon. Clearly, we're far from achieving that.

Growth as a General Problem: Tumors vs. Health

Growth, both in Population and Affluence (as measured by material consumption) is a key component of our predicament.

In many cases we have reached the point where growth is actually *un-economic*: rather than making us better off, growth makes us worse off.^{28,29} To begin to appreciate this, you only have to contemplate the growth question the next time you are stuck in a traffic jam or when you learn that drilling for natural gas is being conducted next to your local elementary school.

Again, this is not to suggest that developing countries should not improve their material well-being. But it begs the question: How can we have prosperity and improvement without growth?

A Classic Illustration Of The Growth Problem

(adapted from World Population Balance - www.worldpopulationbalance.org)²⁷

At 11:00, we place a single bacterium in a bottle. It's so small you'd need a microscope to see it!

In one minute it grows to twice its original size and divides in half, reproducing itself, so at 11:01 there are two bacteria in the bottle.

The bacteria continue growing and dividing, doubling their numbers every minute, so by 11:02 there are four, and by 11:03 there are eight.

At the end of five minutes, there are 32 bacteria where there used to be just one ... but even all together they're still so small they can't be seen without a microscope.

The bacteria keep doubling their numbers every minute, until 12:00, when the bottle fills up.

When do you suppose the bottle was half full?

That's right! At 11:59, the bottle is half full!

Since the bottle filled up at 12:00, it must have been half full just a minute before.

At 11:45 we could just barely see the bacteria, and at 11:30 we still needed a microscope!

We expect the bottle to fill with bacteria as if we were filling it with water from a faucet. But any time living things are allowed to reproduce freely, their numbers increase exponentially, not linearly. And when people talk about "steady growth," they mean exponential growth then, too.

If you were one of the bacteria, when do you suppose you'd start to worry about overcrowding?

Would that leave you enough time to do anything about it?

Now imagine that just at 12:00, these enterprising bacteria discover three more bottles. The new bottles are unpopulated. It would be like us discovering three whole new planets.

If we can help the bacteria to spill over into the other bottles, they'll have four times as much space as they've ever had before!

How much time after 12:00 do you think this will give them?

Answer: Only two minutes.

By 12:01 the bacteria in the first bottle have doubled to fill the second bottle. At 12:02, all four bottles are full!

A number of aspects of our environmental situation are similar to the bacteria's situation in this story.

For example, the human population of the world has doubled twice in the past hundred years. Energy consumption is doubling about four times faster than that, and the number of automobiles in the world is doubling ten times faster than population.

These are just a few examples. Any time you hear that something is increasing by a percentage -- say, 5% per year -- that means it's growing exponentially.

There's an easy way to figure out how quickly something will double when it's growing exponentially. Just divide 70 by the percent increase, and you've got the doubling time.

For example, if you hear that the population of your town is growing by 2% per year, that means it will double in just 35 years! ($70/2=35$)

It works in reverse, too: divide 70 by the doubling time to find the growth rate. If you hear that U.S. population is due to double in 70 years, you know that it's increasing at 1% per year ($70/70=1$). Isn't it amazing that just a 1% annual increase can cause a doubling in 70 years?

Remember this "Rule of 70" whenever you hear that something is growing by some percentage, or that something is growing steadily. That means it's going to double -- and probably sooner than you think!

There are those who say we don't need to worry about running out of oil, because there's still lots of oil left in the ground. Experts believe that over the past 150 years we have used up about half the total oil on Earth. In other words, our oil supply "bottle" is still half full. But, if we keep doubling our consumption, all the remaining petroleum will only last for one more doubling! So what time does that make it in our "bottle"? 11:59!



Small percentages of growth can have big impacts.

For example, if the population of your town is growing by 2% per year, it will double in just 35 years!

Prosperity without Growth

Our ability to prosper is bounded by the fact that we live on a finite planet with finite resources. Pressing against that boundary is the size of the global population. Growth in population increases demand for material goods and energy, clearly increasing the pressure on Earth's finite resources.

So at some point, *population* growth limits our prosperity. What about *economic* growth?

Economic growth has long been viewed as an unadulterated good. But growth in the economic system drives consumption of materials and energy, which stresses the planet's finite resources.

Furthermore, growth in the economic system is a false goal. Growth has been seen as good because it has been seen as the path to prosperity. But the real end-goal has always been prosperity; growth was only the means. Why not aim directly for prosperity? Now that much of the growth in the economic system is *uneconomic*, we need to find a different path to prosperity. We need to have an economy that is of the optimum scale relative to the ecosystem.

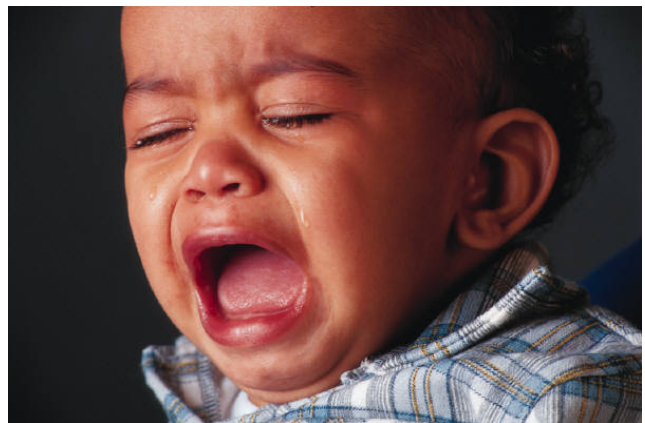
But here the modern economic system has us in a bind. In *Prosperity Without Growth: Economics For A Finite Planet* Tim Jackson, Economics Commissioner for the UK Sustainable Development Commission describes what he calls "the Dilemma of Growth":

- Growth is unsustainable – at least in its

current form. Burgeoning resource consumption and rising environmental costs are compounding profound disparities in social well-being.

- 'De-growth' is unstable – at least under present conditions. Declining consumer demand leads to rising unemployment, falling competitiveness and a spiral of recession.³¹

In our growth-based economy, he says, "growth is functional for stability. The capitalist model has no easy route to a steady state position. Its natural dynamics push it towards one of two states: expansion or collapse."³² If the economy slows for any reason then the system trends toward improved labor productivity, which leads to



Growth in Population Dilutes Democracy

In 1776 the U.S. population was well under 4 million; today it is over 300 million. So by sheer population growth your voice counts for only about 1.3 percent of what it would have at the birth of our democracy.³⁰

unemployment.³³ Jackson demonstrates that the chief cause of the economic crisis of 2008 was the continuation and protection of economic growth.³⁴

With a declining global resource base and increasing global population we can try either:

a) doing more with relatively less (“relative decoupling”)

or

b) doing more while resource impacts decline in absolute terms (“absolute decoupling”)

Since efficiency is one of the things that modern economies can be good at, decoupling has a familiar logic and a clear appeal as a solution to the dilemma of growth. But as we’ve seen above with the Jevons paradox, decoupling, at least relative decoupling, offers a false hope. (Furthermore, seeking unlimited growth on a limited planet is insane.³⁵)

Assessing the situation, Tim Jackson concludes: “The truth is that there is as yet no credible, socially just, ecologically sustainable scenario of continually growing incomes for a world of 9 billion people. In this context, simplistic assumptions that capitalism’s propensity for efficiency will allow us to stabilize the climate or protect against resource scarcity are nothing short of delusional.”³⁶

Growth is a general problem

Most growth now is *un-economic*:

It leaves us worse off rather than better off.

Where growth is truly economic, we need to balance it with efficiency improvements and population stabilization

What we ultimately need is prosperity without growth

What We All Want: The Vision

Security, Health, Jobs & Happiness – For All, Ongoing

I believe that most people in the world could agree that ideally we all want security, jobs, health, and happiness for all, ongoing. This is true prosperity.

Many of us have been using the word “sustainability” as a shorthand word to stand for security, jobs, health, and happiness for all, ongoing. The problem is that, for many people, “sustainability” is too abstract to be relevant to their lives.³⁷ Many others have been influenced by distorted framing from vested interests who try to make “sustainability” stand for negative outcomes such as discomfort, loss of freedom, loss of power, loss of jobs, etc. But “sustainability” is not an end in itself but a means to reach a more fundamental goal of a strong, healthy and just society that is living within environmental limits.³⁸ So we should talk about what we really mean by “sustainability”: something along the lines of Security, Health, Jobs, & Happiness – For All, Ongoing.

Making explicit a compelling vision of the future is a key factor in bringing about the changes we want. Without such a model of the future, societies have historically stagnated and decayed.³⁹ And having such a model is motivational at all three levels discussed below.



Solutions Are Possible

Although we face a dire predicament, we can prevail. Lester Brown and the Earth Policy Institute not only document the problem but also prescribe a solution. The solution has four components:

1. Stabilize climate
2. Stabilize population
3. Eradicate poverty
4. Restore the earth's damaged ecosystems

More details about the prescription are available at the Earth Policy Institute's website www.earthpolicy.org/action_center/C30 and in Lester Brown's book *World on the Edge*, also available online at the Earth Policy Institute website. Some data about the current status of these four components are available at www.earth-dashboard.org.

The Cost Is Manageable

The solution is complex and expensive, but according to the Earth Policy Institute the cost is manageable. It would take about 12% of what the world currently spends each year on military budgets. The alternative – collapse of civilization as we know it – is unthinkable. Given the scope of the predicament, this spending should become the world's new security budget.

The Alternative Is Unthinkable

Three Key Behaviors

Countless ideas have been suggested for moving us in the right direction. The ideas range from changing a light bulb to changing policy. My training in behavioral science leads me to frame the question in terms of behaviors, specifically: What are the behaviors that, if enacted broadly enough, would get us to where we need to be? I think the answer can be boiled down to three key behaviors. They can be stated as decision rules.

When facing any decision, whether in making a purchase or not making a purchase, developing policy or regulation, developing a product or service, passing legislation, or choosing how to devote the time we contribute to society, we should choose:

1. The low footprint / high equity option
2. Prosperity rather than growth
3. That which maintains and restores ecosystems

I believe that these three behaviors constitute the core ethics for making wise choices and maintaining a livable planet.

What do these mean and why are they important?

Low Footprint / High Equity

“**Low footprint**” means selecting the option that uses the fewest non-renewable resources and puts the smallest burden for waste absorption back on the earth.⁴⁰

Low footprint choices are clearly essential, not only for our thriving but for our very survival. According to the Global Footprint Network, humanity today uses the equivalent of 1.5 planets to provide the resources we use and absorb our waste. This means it now takes the Earth one year and six months to regenerate what we use in a year.⁴¹ We clearly can't go on like this.

The “low footprint” option would, for example, drive high efficiency choices; it would use renewable energy rather than fossil fuels; it would put no toxins into the environment; and at best the “waste stream” of its production and consumption process would constitute a raw materials stream for another process. (This productive use of the waste stream is sometimes referred to as “Cradle-to-Cradle”⁴² or “Biomimicry”⁴³.) In housing, the low footprint option would be to move toward net zero buildings – buildings with zero net energy consumption and zero carbon emissions annually.



The most urgent low footprint choices now are those that reduce our footprint of greenhouse gases (GHG), primarily CO₂ but also methane, nitrous oxide, and a few others, along

with our footprint of black carbon, a form of particulate air pollution most often produced from biomass burning, cooking with solid fuels and diesel exhaust. Reducing our GHG footprint will slow the rate of global climate disruption and reduce the extent of famine and wars over water and other resources.⁴⁴

Low footprint choices also have substantial economic advantages for both businesses and consumers. Economic advantages have been well documented, as for example in Hunter Lovin's book *Climate Capitalism: Capitalism in the Age of Climate Change* and other resources available at Natural Capitalism Solutions (www.natcapsolutions.org).

"High equity" is a principle enshrined in the preamble to the Declaration of Independence. It means taking the option that improves social justice. Social equity implies fair access to livelihood, education, and resources; full participation in the political and cultural life of the community; and self-determination in meeting fundamental needs. As Martin Luther King observed, "where there is injustice for one, there is injustice for all."⁴⁵ Social equity is the cornerstone of society, which cannot be maintained for a few at the expense of the many.

Social justice is important for rich people as well as poor. High equity societies contribute to a sense of community, which is an ingredient of happiness. Increased equity results in decreased spending on prisons, security enforcement, welfare, and social services. It also creates new potential markets. High equity societies prosper more than do societies marked with large disparities of class and income. Political scientists Jacob S. Hacker and Paul Pierson remind us of the warning by the historian

Plutarch: "An imbalance between rich and poor is the oldest and most fatal ailment of all republics."⁴⁶

Joseph Stiglitz, former chairman of President Clinton's Council of Economic Advisers and former senior vice president and chief economist at the World Bank says: "There are good reasons why plutocrats should care about inequality anyway—even if they're thinking only about themselves. The rich do not exist in a vacuum. They need a functioning society around them to sustain their position. Widely unequal



societies do not function efficiently and their economies are neither stable nor sustainable. The evidence from history and from around the modern world is unequivocal: there comes a point when inequality spirals into economic dysfunction for the whole society, and when it does, even the rich pay a steep price...

"The relationship is straightforward and ironclad: as more money becomes concentrated at the top, aggregate demand goes into a decline. Unless something else happens by way of intervention, total demand in the economy will be less than what the economy is capable of supplying—and that means that there will be growing unemployment, which will dampen demand even further. In the 1990s that "something else" was the tech bubble. In the first decade of the 21st century, it was the housing bubble. Today, the only recourse, amid deep recession, is government spending—which is exactly what those at the top are now hoping to curb."⁴⁷

Looking at a range of health and social issues in OECD⁴⁸ nations, Richard Wilkinson and Kate Pickett in *The Spirit Level* draw the same conclusion: that the benefits of equality don't just accrue to the less fortunate members of society. Inequality has damaging impacts across the nation as a whole.⁴⁹

"Low footprint" and "High equity" are paired to emphasize the importance of achieving both together and not sacrificing one for the sake of the other. (The pyramids of Egypt were a low footprint but low equity endeavor.)

The "low footprint / high equity" behavior supports the Earth Policy Institute's prescriptions number 1 (stabilize climate) and number 3 (eradicate poverty).

Prosperity Rather Than Growth

"Prosperity rather than growth" means recognizing that growth in population and growth in levels of consumption are killing us.



Like the bacteria in the jar we will sooner or later run out of room and out of resources, since we live on a finite planet. "Prosperity" is what we all really want:

Security, Health, Jobs, &

Happiness – For All, Ongoing. It means both improving non-material qualities of life such as happiness, freedom, education, art, etc. and also, importantly, improving the material quality of life for the poor and disadvantaged of the world in the process of increasing equity as we simultaneously work to reduce our global footprint and stabilize population.

It's clear from the earlier discussion that growth is killing us. Prosperity rather than

growth leads to both an increase in equity and an increase in those factors that can contribute to happiness.

Why have we chosen "growth" up until now? It is because we have believed that growth is the route to prosperity and happiness. But when growth is uneconomic growth, it leads not to prosperity and happiness but to the opposite. Why not aim directly for prosperity?

"Prosperity" is turning swords into plowshares. "Growth" is turning one sword into two swords, two swords into four swords, four into eight, and so on. It's not what we really want or need.

The "prosperity rather than growth" behavior supports the Earth Policy Institute's prescription number 2 (stabilize population).

Maintain and Restore Ecosystems

"Maintain and restore ecosystems" means putting our house in order and keeping it in order. "Eco" comes from the Greek word for house and is the root of both "economy" and "ecology".

If the ecosystem collapses, everything else collapses, including the economy. As economist Herman Daly points out, "What good is a sawmill without a forest, a fishing boat without populations of fish, a refinery without petroleum deposits, an irrigated farm without an aquifer or river?"⁵⁰

Jared Diamond in his book *Collapse*, documents the history of several civilizations that brought about their own demise by, knowingly or unknowingly, neglecting the health



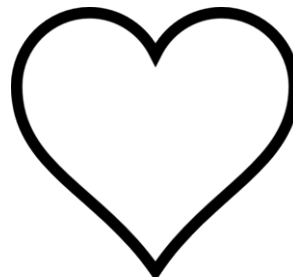
of their ecosystems.⁵¹ To maintain and restore ecosystems is to keep this lifeboat we call Earth from springing a fatal leak.

Some examples of restoring ecosystems include planting trees, reclaiming industrial sites, connecting biological reserves so as to create wildlife corridors, and restoring rivers via dam removal.⁵² One inspiring example of restoring ecosystems is China's restoration of its loess plateau.⁵³ Another is the sustainable village of Gaviotas in Columbia, South America that has regenerated an indigenous rainforest.⁵⁴ As is true in Gaviotas, "restoring ecosystems" also

generally implies restoring human communities as viable ecosystems.

Fortunately, there are many other examples, including the Green World Campaign.⁵⁵ As I will discuss later under Personal Motivation, to restore an ecosystem is also to restore ourselves as individuals.

The "restore ecosystems" behavior supports the Earth Policy Institute's prescription number 4 (restore the earth's damaged ecosystems).



Scalability, Clarity, Morality

One of the beauties of these three key behaviors is that they are scalable: They can be enacted at the structural level, at the social level, and at the personal level. Take low footprint energy as an example. At the structural level we can create policy and regulations that support low carbon footprint renewable energy, and we can improve our technologies that produce renewable energy. At the social level we can support each other in making low footprint energy choices. And at the personal level we can make low energy footprint purchasing decisions, get in the habit of not letting our car engines idle, of taking public transportation or biking when

feasible, and, of course, we can change out our light bulbs.

Another beauty is clarity: If a choice doesn't shrink our footprint, if it doesn't support equity, if it fosters growth rather than true prosperity, if it doesn't maintain or restore ecosystems, it's simply not helping.

For those of a religious orientation a further beauty is that these three behaviors align with the moral teachings of all the great spiritual traditions of the world. All the great spiritual traditions teach a version of the Golden Rule: behave toward others as you would have others behave toward you. And all teach that there are consequences for making bad choices. These three behaviors constitute the core ethics for making wise choices and maintaining a livable planet.⁵⁶

Social/ Psychological Change Levers

In order to survive and thrive in our predicament we need changes in behavior. So the question arises: what are the social and psychological factors that can promote or hinder the enactment of the three key behaviors?

A useful framework for considering the problem is a six-box model, with two arenas and three levels. The two arenas are motivation and ability. When it comes to changing my behavior, I may or may not be Motivated to do it. And if I am motivated, I

	Motivation	Ability
Structural		
Social		
Personal		

may or may not be Able to do it. The three levels are: Structural, Social, and Personal. Different potential change levers exist at each level within each arena.⁵⁷

When we want to take pro-social action, this framework can help us clarify our objectives, understand the forces we are dealing with, and discover approaches that can lead to success.

Structural Level

The structural level has to do with physical structure as well as the rules of the system – the incentives, punishments, and constraints.⁵⁸ All of these factors exert a tremendous influence on behavior. And

given the scale of the predicament that we face we won't be able to do what we need to do without structural changes.⁵⁹

The rules of the largest structural systems are set by governments, so there is a major role for governments at this level, as well as for political action at the social level to influence governments.

Structural – Motivation: Make the Right Choice the Most Desirable

	Motivation	Ability
Structural		
Social		
Personal		

The structure of a situation can either motivate or de-motivate the right behavior depending on whether the structural payoff reinforces the right behavior or its opposite. I'll discuss a couple of examples.

Indicators: What Behaviors Do Our Feedback Mechanisms Reinforce?

One of the most important motivational signals that the structural level provides is feedback on how well or how poorly we are doing.

Make the Right Choice the Most Desirable

- Feedback Structure
- Payoff Mechanisms

For feedback on how we are doing as a society we typically rely on the Gross Domestic Product (GDP). Unfortunately this feedback is deeply flawed. For one thing, the GDP is only a measure of the busyness of the economy. It makes no explicit judgments about the nature of economic activity. Implicitly, though, it assumes that monetary value is the only thing that counts. It also assumes that all monetary value is equivalent. So the costs of cleaning up pollution, building prisons, and waging war are treated the same as the costs of education,

health care, and producing clothing and food. Also it ignores many things that happen outside of the market economy, such as the value of household work and volunteering. It does not reinforce the making of low

footprint / high equity choices or the restoration of ecosystems. And it certainly does not reinforce prosperity above growth.

Relying on the GDP for feedback is like driving a car while looking only at the speedometer and becoming excited when the car is moving faster, while neglecting to look ahead through the windshield to see if the car is still on the road or headed off a cliff.

We need new feedback mechanisms. Several alternatives to the GDP have been proposed including the Genuine Progress Indicator^{60,61} and, notably, Gross National Happiness⁶² presently adopted by Bhutan but being considered by other countries including France.⁶³ (Since United States was formed to secure the rights to “Life, Liberty, and the Pursuit of Happiness”, it would make sense for us to track happiness as one of our key metrics.) Better feedback mechanisms would

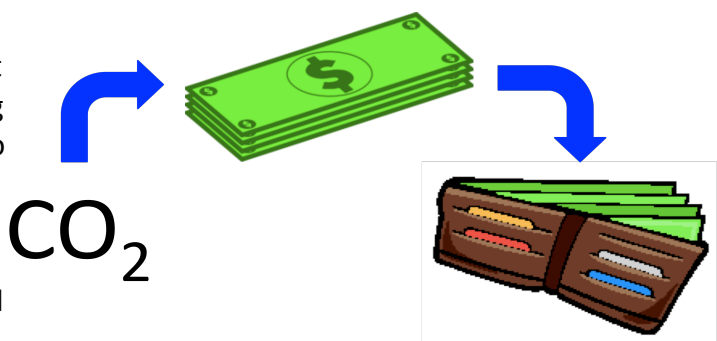
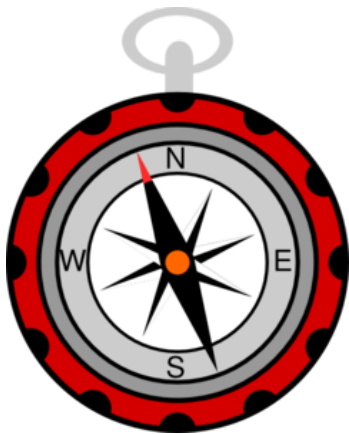
let us know if we are moving in the direction of low footprint / high equity, prosperity rather than growth, and maintaining and restoring our ecosystems.

Financial Incentives: Make the Right Choice the Least Expensive – the CO₂ Example

True cost accounting would help make the low footprint choice cheaper. Currently there are perverse incentives supporting the fossil fuel industry. Societal costs of fossil fuels are almost completely externalized. The most detailed analysis presently available of gasoline’s indirect costs is by the International Center for Technology Assessment.⁶⁴ When added together, the many indirect costs to society—including climate disruption, oil industry tax breaks, military protection of the oil supply, oil industry subsidies, oil spills, and treatment of auto exhaust-related respiratory illnesses—total roughly \$12 per gallon. That is on top of the price paid at the pump. As Lester Brown says, “These are real costs. Someone bears them. If not us, our children.”⁶⁵

One path toward true cost accounting is through tax-neutral tax shifting: reducing the taxes on income and investment while increasing the tax on carbon.⁶⁶ It can work.

The Canadian province of British Columbia instituted such a tax shift in 2008. The tax applies to almost all fossil fuel use in the province. The charge for each fuel type is calibrated to the amount of carbon released by burning it. When the tax was introduced in 2008, it was set at \$10 per ton of carbon dioxide and was designed to rise by \$5 per



year thereafter, reaching \$30 per ton in 2012. BC's carbon tax shift was designed to be "revenue neutral". This means that all carbon tax revenues are used to reduce other taxes.

As of the spring of 2012 British Columbia's four-year trial has brought greenhouse gas emissions down 4.5 percent even as population and gross domestic product have been growing. Sales of automotive gasoline have fallen by 2 percent since 2007, compared with a 5 percent increase for Canada as a whole. Income from the carbon tax is used to reduce taxes for individuals and businesses.

Economist Yoram Bauman and law professor Shi-Ling Hsu report: "Thanks to this tax swap, British Columbia has lowered its corporate income tax rate to 10 percent from 12 percent, a rate that is among the lowest in the Group of 8 wealthy nations. Personal income taxes for people earning less than \$119,000 per year are now the lowest in Canada, and there are targeted rebates for low-income and rural households."⁶⁷ They project that a British Columbia-style \$30 carbon tax would generate about \$145 billion a year in the United States. That could be used to reduce individual and corporate income taxes by 10 percent, and afterward there would still be \$35 billion left over.

A carbon tax would not only insulate us from catastrophic climate risk but would also help balance future budgets and provide a powerful stimulus for full employment.⁶⁸

Structural De-Motivation: System Justification & Structural Conflict

System Justification

When we evaluate our social systems and institutions, our evaluations are influenced by our need to maintain a sense of certainty and

stability, by our need to feel safety and reassurance, and by our relational need to affiliate with others who are part of the same social system. "These needs give rise to a motivation to perceive the system as fair, legitimate, beneficial, and stable, as well as a desire to protect the status quo."⁶⁹

This "system justification" tends to have immediate benefits for the groups advantaged by the existing system, in terms of providing a sense of stability, safety, and relatedness. Unfortunately system justification often has negative immediate outcomes for disadvantaged groups. Also system justification can have negative long-term outcomes even for the advantaged groups if, as in the present case, the system is undermining the livability of the planet. Typically, those who are advantaged by the existing system are enthusiastic about justifying it. However, system justification needs may lead people to support and rationalize the social system even in situations in which they are in actuality harmed by it.^{70,71}

The more that people are motivated to justify the existing social system the less they will be motivated to change it. One possible strategy for working with system justification is to frame the key behaviors as a way of upholding (rather than threatening) cherished social institutions and practices; that the key behaviors are in fact patriotic and help preserve our way of life.

Structural Conflict and Countering the "Pro-Extinction Lobby"

A minority of wealthy and powerful people and organizations who are advantaged within the current structure are using their resources for short-term personal and corporate gain instead of working for what's best for the planet. They use their power to mislead a portion of the population into believing that the interests of the power elite and the interests of the many are aligned.⁷²

They undermine science and an informed public in the pursuit of financial gain.⁷³ The few and powerful against the weak and many is a struggle that has gone on for centuries.⁷⁴ We are currently writing just the latest chapter of this ongoing history. The difficulty is that this time the resources and forces involved could potentially destroy the ability of the planet to support human life as we've known it.

For simplicity, this minority could be called the "Pro-Extinction Lobby" because the logical consequence of the actions they endorse is the extinction of civilization as we know it. They try to influence us to make choices that are:

- High footprint / low equity, rather than low footprint / high equity.
- Supportive of "growth" rather than "prosperity".
- Destructive of the environment.

Much of the pro-extinction lobby is a manifestation of what is called "structural conflict." Structural conflict occurs when the structure of the situation itself coerces people into conflict. You could put two saints in a situation of structural conflict and they would be at each other's throats within minutes, despite their goodness as individuals.

The leaders of most corporations are under tremendous pressure from the financial markets to achieve growth and short-term gain. These powerful financial motivators have caused many in the "pro-extinction lobby" to try to influence the structure of social and financial



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mechanisms in ways that make it even harder for society to move in the right direction. This interference has affected both motivation and ability.

One of Martin Luther King, Jr.'s great insights is that we need to work not only to free ourselves, but also to free our oppressors. This isn't to say that the pro-extinction lobby is without guilt. Racist segregationists were not without guilt. It's just to say that the dynamic is more complex than simply "good" versus "evil". Changing the structure to minimize structural conflict could increase motivation toward positive behaviors.

Structural – Ability: Make the Right Choice the Easiest

	Motivation	Ability
Structural		
Social		
Personal		

The ability to make optimal choices can be either hindered or facilitated by physical, organizational, and/or legal structures. Ideally, structure should make our three key behaviors at least easy and at best inevitable or unavoidable. Structural factors also can eliminate the potential for undesirable behavior. This has been achieved through bans on the sale of incandescent bulbs in Europe and bans on plastic shopping bags in various communities.

Let's look at Structural Ability in four areas, of increasing complexity: Technology, Policies/Standards/Laws, Infrastructure, and Systems.

Technology

Technology represents the simplest structural level. The right technology can make the superior choice also the easiest

	Motivation	Ability
Structural		
Social		
Personal		

choice. For example, simply changing a light bulb from an Edison bulb to a CFL or LED bulb, or installing motion-detecting light switches makes the low footprint choice so easy that it’s automatic. There are numerous other examples.

As Amory Lovins demonstrates in his book *Reinventing Fire*, more efficient technology and improved design can change the structure of cities, neighborhoods, buildings, and productive processes to make them more sustainable.⁷⁵ The only real decision here is the purchase decision, which depends on structural, social, and personal motivation. Once that decision is made, the low footprint choice becomes automatic. It is much easier, for example, to make a one-time installation of a programmable thermostat than it is to remember to turn a manual thermostat up and down every day.

But, as discussed above, improved technology alone won’t solve the problem.

Policies, Laws, and Standards

At a slightly more complex level, individual policies, laws, or standards, or small, relatively manageable sets of policies/laws/standards can affect the ability to make the positive behavioral choices.

Throughout the country outdated policies and laws present structural obstacles to the ability to make the low footprint / high equity choice. A recent report by the Sightline Institute found “rules on the books [that] currently make it more difficult to share bikes, find a taxi, reuse pickle jars, take toddlers on a

bus and, in some places, hang a clothesline. Some require companies to deliver outdated products that no one wants, or to infuse them with unnecessary chemicals. Others work against smart economic incentives, like allowing people who only drive a little to pay less for car insurance.”⁷⁶

The list of policies, laws, and standards that could stand revision could be quite long. Here are just a couple of additional examples:

- Policies that raise efficiency standards, such as automobile fuel efficiency (“CAFE”) standards and appliance standards can give consumers more low-footprint choices.
- Uniform national codes and uniform national procedural standards for installing photovoltaic systems or solar thermal systems would greatly ease ability of adoption.

One way that policies, laws, and procedures could make the right choice the easiest choice is to have the right choice be the default choice and the other choices requiring an “opt-out” of the default choice.

Infrastructure

Infrastructure generally refers to the basic physical components and related organizational structures that provide functions essential for the operation of a society or enterprise. Infrastructure typically involves some amount of policy or law, and at the larger scales could be considered as a whole system. Here are a couple of infrastructure examples related to Ability:

- If the infrastructure for an organized recycling program is missing in a community, it is very hard for people to recycle even if they are socially and personally motivated to do so. If people want to use public transportation but there is no public transportation infrastructure, they will drive private automobiles instead.
- According to the Guttmacher Institute, 222 million women in the developing world want to avoid pregnancy but have no access to affordable and appropriate modern contraception.⁷⁷ This infrastructure problem prevents these women from making choices that favor prosperity rather than growth.

Systems

A system typically involves a complex, interdependent, and mutually reinforcing set of technologies, procedures, and policies. Typically, in addition, these are also reinforced by social habits and conventions.

A city's electric distribution system is a relatively small system. The city of Boulder in Colorado may municipalize its electric system in order to increase the percentage of renewable energy on its grid. If successful, this one structural change would make the use of renewable energy easy for all Boulder citizens.

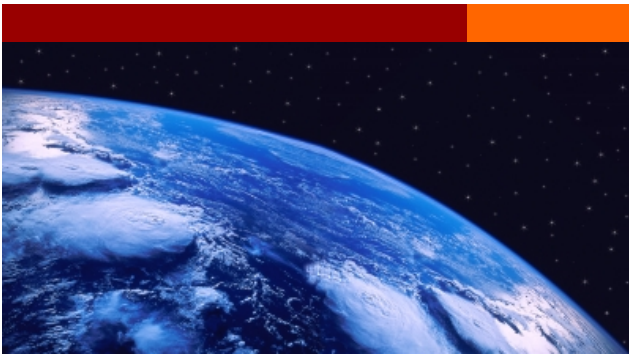
Larger systems are typically the most refractory or difficult to change, due to their size and complexity.

A potential complication in trying to change a large system is the problem known as "technological lock-in." With technological lock-in an inferior technology becomes so embedded in a system that it becomes almost impossible to replace with a superior technology. This usually happens when the inferior technology becomes widely adapted because it is the best available technology at the time of adaptation. A classic example of lock-in is the QWERTY keyboard

used on typewriters and then computers. It has been well demonstrated that a different keyboard would facilitate faster typing speeds, but because QWERTY has been so widely adopted and so widely learned, it remains the keyboard standard.

Make the Right Choice Easiest by Improving

- Technology
- Policy/Standards/Laws
- Infrastructure
- Systems



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The Economic System: Structural Ability *and* Motivation

	Motivation	Ability
Structural		
Social		
Personal		

Perhaps the largest human-made system within which we live is the economic system. The economic system affects both ability *and* motivation.

The economic system itself may be suffering from a species of lock-in. We've created an economic system that craves growth and begins to stumble and spiral downwards whenever growth stalls. Tim Jackson calls this the "dilemma of growth."⁷⁸

The scale of the problem is staggering. "The carbon intensity of every dollar of output must be at least 30 times lower in 2050 than it is today. By the end of the century economic activity will need to be taking carbon out of the atmosphere, not adding to it....The dilemma, once recognized, looms so dangerously over our future that we are desperate to believe in miracles. Technology will save us. Capitalism is good at technology. So let's just keep the show on the road and hope for the best. This delusional strategy has reached its limits."⁷⁹

We need to restructure our economic system into a steady state economy that can thrive within the regenerative and assimilative capacities of the ecosystem. It would likely include investments targeted on resource productivity (eco-efficiency) rather than labor productivity, ways to share the work such as a shortened workweek so as to maintain employment, and a substantially enhanced role for public investment, especially in the energy sector (with the returns on investment going to the public). It would include replacement of the GDP with a better metric. It would include taxes on ecological "bads" (e.g. on CO₂ emissions / carbon, on waste, on excessive consumption) and economic recognition of the value of natural capital and ecosystem services. It would regulate for increased financial and fiscal prudence, for example: increasing bank reserve requirements and a tax on international currency transfers ("Tobin tax"). It would support ecological transition in developing countries. It would recognize ecological caps and converge resource use to a sustainable level. It could include green bonds.

One of the goals of restructuring our economic system would be to reduce the amount of the structural conflict in the system.

Critically, there is only a narrow 'sustainability window' through which the economy must pass if it is to make the transition to a non-fossil world successfully. In order to pass through this window there has to be less consumption and more investment in

sustainable infrastructure. It will be a delicate balancing act. “If we invest too slowly, we run out of resources before alternatives are in place. Fuel prices soar and economies crash. If we invest too fast, there’s a risk of slowing down the economy to the extent that the resources required for further investment aren’t available.”⁸⁰

A full discussion of the steady-state economy is outside the scope of this paper. As with other aspects of our predicament, restructuring the economy is an unprecedented challenge and will require the best of our thinking.

Some thought-provoking ideas about the policies (structure) necessary to achieve a steady state economy are available at the website for the Center for the Advancement of the Steady State Economy:
<http://steadystate.org/discover/policies> . Other resources include: Center for the Advancement of the Steady State Economy (steadystate.org), the New Economics Institute (neweconomicsinstitute.org/about_us), the New Economy Network (www.neweconomynetwork.org), the New Economy Working Group (neweconomyworkinggroup.org), and Foundation Earth (www.fdnearth.org).

Changing the economic framework so that it functions within ecological limits and provides capabilities for citizens to flourish within ecological limits will require social pressure. This leads us to consideration of the Social level.

Social Level

Social – Motivation

	Motivation	Ability
Structural		
Social		
Personal		

The Importance of “Social Proof”

Psychologist Robert Cialdini tells the following story: In March of 1964 a woman in her late twenties was attacked and murdered on her street in New York City as she returned from work. The *New York Times* reported:

“For more than half an hour 38 respectable, law-abiding citizens in Queens watched a killer stalk and stab a woman in three separate attacks in Kew Gardens.

“Twice the sound of their voices and the sudden glow of their bedroom lights interrupted him and frightened him off. Each time he returned, sought her out, and stabbed her again. Not one person telephoned the police during the assault; one witness called after the woman was dead.”⁸¹

With 38 witnesses, why did no one take any action to help? Cialdini says that part of the answer is precisely because there were so many witnesses. This event, he says, is a striking example of the power of what he calls “social proof.” Any novel situation presents us with uncertainty. In times of uncertainty we tend to look around to others for clues as to how to behave. Cialdini continues:

“What is easy to forget, though, is that everybody else observing the event is likely to be looking for social evidence, too. Because we all prefer to appear poised and unflustered among others, we are likely to search for that evidence placidly, with brief, camouflaged glances at those around us. Therefore everyone is likely to see everyone else looking unruffled and failing to



FreeDigitalPhotos.net – “Smiling Friends” by stockimages

act. As a result, and by the principle of social proof, the event will be roundly interpreted as a nonemergency. This, according to Latané and Darley is the state of *pluralistic ignorance* ‘in which each person decided that since nobody is concerned, nothing is wrong. Meanwhile, the danger may be mounting to the point where a single individual, uninfluenced by the seeming calm of others, *would* react.”^{82,83}

“Social proof” means that we tend to view a behavior as correct in a given situation to the degree that we see others performing it. In the case of our global environmental crisis, as long as people look around and see that their neighbors and friends are not changing their behavior, people will assume that the “crisis” is not really that important and is not worth doing anything about.

Norms

Social proof is an instance of the power of the key social motivational factor: social norms. Norms are the unspoken rules

	Motivation	Ability
Structural		
Social		
Personal		

about “how we do things around here”, in other words they set the boundaries around what behavior is legitimate and normal. Norms vary from culture to culture, but within a culture they are enforced by making the person who does not conform to the norms feel excluded through subtle signals (e.g. body language) or not so subtle signals (e.g. outright shunning). Because no one wants to feel excluded from the society within which he or she exists, norms are probably the most powerful social means to motivate or demotivate specific behavior.

Norms are a social phenomenon. When people form groups, the groups become emergent entities with new characteristics unique to themselves, separate from the characteristics of the individuals that comprise the group. Norms are influenced indirectly by an accumulation of social proofs.

As human beings we are automatically attuned to social norms, to the degree that we tend to abide by them without necessarily being conscious of them. Dirty streets get littered, clean streets don't. Patrons in big, noisy, crowded pubs become drunk and aggressive, in small quiet bars they drink quietly and sociably.⁸⁴

There are at least two sorts of norms: norms that involve perceptions of which behaviors are typically performed (“descriptive norms”) and norms that involve perception of which behaviors are typically approved or disapproved (“injunctive norms”).

If the desired behavior is prevalent, then the behavior can be reinforced through both descriptive norms (e.g. “most people don't litter) and injunctive norms (e.g. “and

people disapprove of littering”). If the desired behavior is not prevalent, then using descriptive norms (e.g. “too many people litter”) is actually counter-productive, since it gives the message that it's normal to litter. Only the injunctive norm (“people disapprove of littering”) is helpful.⁸⁵

In several pilot studies, social norms have been used to motivate pro-environmental behavior.

The Sacramento Municipal Utility District (SMUD) studied the results of sending Home Electricity Reports along with the monthly bills. The study group consisted of 35,000 randomly selected residential customers representing a broad cross section of ages, incomes, sizes of homes and other factors. A control group of 60,000 customers was also randomly selected. Both groups were exposed to district-wide marketing of SMUD's energy efficiency programs and services, but only the test group received the Home Electricity Reports.

In the study group, households with lower-than-average electricity usage found a happy face in the energy efficiency score box on their report. The 20 percent of households with the lowest usage received two happy faces.

Six months after the pilot began, SMUD conducted an initial assessment. They found that customers who had received the Home Electricity Reports reduced their electricity use by 2 percent more than those in the control group, or three gigawatt hours in total. That

	Motivation	Ability
Structural		
Social		
Personal		

is equivalent to removing 700 homes from the electricity grid. After thirteen months, a second evaluation showed that the 2 percent electricity use reduction continued to be sustained.

The Home Electricity Reports cost \$.03 for every kWh reduced, which is one-half the cost of producing electricity from coal and one-tenth the cost of production using solar panels.^{86,87,88,89,90}

Interestingly, research shows that it is the injunctive norm that makes the difference. When the smiley face – conveying social approval – is included in the bill, electricity usage goes down. With just the data but without the smiley face, low users actually increase their consumption.⁹¹

Another study of social norms involved trying to convince college students in residence halls to reduce their electricity consumption. One residence hall had posters focusing on information about environmental impact that said “Computers use 90% less energy when they’re turned off than when they’re running. - Flip off the phantom [power]”. The other residence hall had posters focusing on social norm that said, “77% of residents of [our hall] turn off their electronics when they leave. – Flip off the phantom [power].” The students who saw the environmental impact posters reduced their consumption by 2.96%. The students who saw the social norms poster reduced their consumption by 12.21%.⁹²

The Norm Battleground

Norms are shaped by our perceptions of what behavior is common in our community and what behavior is approved of in our

community. Every day we see evidence of a battle over norms. In this sense people who assert that there is a cultural war going on are quite correct. But the war is multi-dimensional, with powerful resources engaged. For example, corporate interests are constantly attempting to normalize consumption behaviors, particularly consumption of their specific products or services.

Some of the principle engines of norm setting, and of social proof, are the mass media.^{93,94} The mass media are controlled by wealthy people and corporations whose interests do not necessarily coincide with the interests of thriving human communities.⁹⁵ When you hear an advertisement for a particular industry brought to you by “the people” of that industry, you know that “the people” did not chip in \$1 each to help pay for the ad. Rather you know that the industry is trying to influence you falsely to believe that the corporation’s position is the norm for a large number of people. Its position is often the high footprint option that simply pushes us farther and faster down the road to extinction of civilization as we know it.

To delay corrective action successfully, the pro-extinction lobby does not have to prove anything. They only have to induce uncertainty and ambiguity.

Pay attention to norms

	Motivation	Ability
Structural		
Social		
Personal		

Uncertainty about future outcomes generally increases self-oriented behavior and optimistic thinking.⁹⁶ “If it’s still open for debate, things will probably turn out OK. We just need to do our best.”

Norms & “Framing”

Mass media also provide the “frames” or mental filters through which we interpret events. For example, is a regional drought an economic story, a human interest story, or story about evidence of a wide pattern of global climate disruption? Is the story evidence that we should be pursuing the three key behaviors? The way the story is reported frames how we think about it. It reinforces certain norms of thinking and excludes others.

The problematic GDP metric discussed above not only influences the structure of the economic system, but also serves as an implicit norm about what is important to our society. If you raise questions about the GDP, or about “growth” for that matter, you may find yourself shunned.

The Social Construction of Reality

The social reality we inhabit is constructed by our interactions. And our interactions are shaped by our mutual expectations about how each other is going to act in given situations. As our expectations become shaped and validated over time, they become ingrained in society in the form of the reciprocal roles we play in relation to each other and in our habits and customs.⁹⁷ This “institutionalization” of roles and expectations helps us navigate life in the social realm because the roles, habits, and customs make our interactions to a certain extent predictable.

As young humans growing up we need to learn how to relate not only to the physical world but also to the social world. Our biological drives motivate us to eat and to reproduce. But it is the social world in which we live that guides us on what and how to eat and with whom to seek sexual release. As Berger and Luckmann say in *The Social Construction of Reality*, “Society determines how long and in what manner the individual organism shall live.”⁹⁸

Because humans need to belong to some social group in order to survive, we tend to resist anything that would estrange us from our group. This is why we abide by group norms. This is also one of the reasons that we resist factual information that threatens the defining values of a group.

Why “Facts” Are Not Enough: Norms (Social Belonging) Trump Facts

The Cultural Cognition Project at Yale Law School is a group of scholars from Yale and other universities interested in studying how cultural values shape the public’s risk perceptions and related policy.⁹⁹ They have published some fascinating research that sheds light on a seemingly paradoxical situation: although there is near-unanimous scientific consensus that the earth’s atmosphere is warming due to human actions, large numbers of people still refuse to believe it.

In general individuals are psychologically disposed to believe that behavior they (and their peers) find honorable is socially beneficial, and behavior they find base is socially detrimental.⁹⁹

When Norms Trump Facts

From Yale Researcher Dan Kahan¹⁰⁰

For members of the public, being right or wrong about climate-change science will have no impact. Nothing they do as individual consumers or as individual voters will meaningfully affect the risks posed by climate change. Yet the impact of taking a position that conflicts with their cultural group could be disastrous.

Take a barber in a rural town in South Carolina. Is it a good idea for him to implore his customers to sign a petition urging Congress to take action on climate change? No. If he does, he will find himself out of a job, just as his former congressman, Bob Inglis, did when he himself proposed such action.

Positions on climate change have come to signify the kind of person one is. People whose beliefs are at odds with those of the people with whom they share their basic cultural commitments risk being labeled as weird and obnoxious in the eyes of those on whom they depend for social and financial support.

So, if the cost of having a view of climate change that does not conform with the scientific consensus is zero, and the cost of having a view that is at odds with members of one's cultural community can be high, what is a rational person to do? In that situation, it is perfectly sensible for individuals to be guided by modes of reasoning that connect their beliefs to ones that predominate in their group. Even people of modest scientific literacy will pick up relevant cues. Those who know more and who can reason more analytically will do a still better job, even if their group is wrong on the science.



	Motivation	Ability
Structural		
Social		
Personal		

In the Second National Risk And Culture Study, the Cultural Cognition Project researchers looked at how individuals’ cultural worldviews influence beliefs. The researchers found that differences in basic values explained individuals’ beliefs about global warming more powerfully than any other individual characteristic, including gender, race socioeconomic status, education, and political ideology and party affiliation.¹⁰¹

People who subscribe to a “hierarchical” worldview believe that rights, duties, goods, and offices should be distributed differentially and on the basis of clearly defined and stable social characteristics (e.g., gender, wealth, lineage, ethnicity). At the other end of this scale, those who subscribe to an “egalitarian” worldview believe that rights, duties, goods, and offices should be distributed equally and *without* regard to such characteristics.

People who subscribe to a “communitarian” worldview believe that societal interests should take precedence over individual ones and that society should bear the responsibility for securing the conditions of individual flourishing. At the other end of this scale, those who subscribe to an “individualistic” worldview believe that individuals should secure the conditions of their own flourishing without collective interference or assistance.¹⁰²

One of the most fascinating findings was that expectations about the policy solution to global warming strongly influences willingness to believe factual information about climate change. When told the solution to global

warming is *increased antipollution measures*, people with individualistic and hierarchic worldviews became *less* willing to believe global warming exists, is caused by humans, and poses significant dangers. When told the solution was *increased reliance on nuclear power generation*, the same people became *more* willing to believe those same facts.¹⁰³

Norms trump facts

Some practical insights from the Cultural Cognition studies:

- We can be most effective with our communications if we use narratives that fit with the cultures of our target groups. Defensiveness about threatening information can be mitigated if it is framed in a manner that affirms key cultural commitments.
- People attend more open-mindedly to information inconsistent with their predispositions if they perceive that there are experts of diverse values on both sides of the debate. The cultural identity of advocates is an “incredibly powerful mechanism – one that rivals the power that predispositions have on information processing.”¹⁰⁴
- When the expected advocates take expected positions in a debate, it can actually increase the polarization of the audience. When the advocates take positions in a debate contrary to their expected alignment, the polarization in the audience shrinks.
- When individuals see that someone who holds their own values is willing to take a position contrary to the culturally expected one, they are less likely to form the subconscious impression that taking such a view will estrange them from their peers.



	Motivation	Ability
Structural		
Social		
Personal		

Confirmation Bias

The findings of the Yale Cultural Cognition Project are supported by a large body of research about what is known as “confirmation bias.” This research shows that we have a strong tendency to favor information that supports or confirms our beliefs, especially when those beliefs are emotionally charged or deeply held. Thus we tend to seek out information selectively from sources that affirm our beliefs. Likewise we tend to remember information selectively. We also tend to interpret ambiguous information in a way that supports our beliefs. We tend to test ideas in a one-sided way that favors our pre-conceived beliefs or hypotheses. Confirmation bias contributes to overconfidence in our own beliefs, even in the face of contradictory evidence. Confirmation bias has led to poor decisions, even in the evidence-based field of science.

Not only do we favor information that confirms our beliefs, for some people being presented with disconfirming facts actually *strengthens* their ideologically grounded belief in their original (though mistaken) “facts.”¹⁰⁵ This may be true for both political liberals and conservatives.

We tend to seek out
information that
confirms our beliefs

The Social Logic of Consumerism – The Symbolic Role of “Things”

Part of our predicament is caused by the mass consumption of “things”, from sweaters and cooking pots to computers and cell phones to “The 85 Foot Inflatable Military Obstacle Course” (only \$12,500 from Hammacher Schlemmer¹⁰⁶).

As Tim Jackson notes, “material artifacts constitute a powerful ‘language of goods’ that we use to communicate with each other, not just about status, but also about identity, social affiliation, and even – through giving and receiving gifts for example – about our feelings for each other, our hopes for our family, and our dreams of the good life. This is not to deny that material goods are essential for our basic material needs: food, shelter, protection. On the contrary, this role is critical to our physiological flourishing: health, life expectancy, vitality. But stuff is not just stuff. Consumer artifacts play a role in our lives that goes way beyond their material functionality. Material processes and social needs are intimately linked together through commodities. Material things offer the ability to facilitate our participation in the life of society. And insofar as they achieve this, they contribute to our prosperity.”¹⁰⁷

There are several psychological processes at play here. For one, we humans can tend to invest emotional energy in material things to the point that we feel our possessions are an extension of ourselves. (Is your car just a mode of transportation or also an expression of who you are? How about your clothes...simply something to keep you warm in winter and

decent, or something more?) Then there is social comparison: the role that material things play as a marker of social status. Many of the latest consumer appliances and fashions are accessible at first only to the rich. As niche

growth. These powerful forces tend to lock us in to what Tim Jackson calls the “iron cage of consumerism.”

In many cases, when you buy something you are not buying a product but what spiritual teacher Eckhart Tolle calls an “identity enhancer.” He continues, “A large part of many people’s lives is consumed by an obsessive preoccupation with things. This is why one of the ills of our times is object proliferation. When you can no longer feel the life that you are, you are likely to try to fill up your life with things.”¹⁰⁸

Chilean economist Manfred Max-Neef has developed a list of human needs that comprises: subsistence, protection, affection, understanding, participation, idleness, creation, identity, and freedom.¹⁰⁹ (To this list I would add beauty and transcendence.) Only one item on the list, subsistence, truly requires material inputs. One other, identity, in our present society leans heavily on material symbols. But this dependence is not inevitable.

Historically, material affluence (the “A” in the equation discussed earlier)

market products move into mass production the once luxury goods become available to many. So, at least on a superficial level, through physical things people are able to reinvent their social identities.

has been seen as synonymous with improved well-being. But many human needs can actually be satisfied *without* material inputs.

Unfortunately material goods are never really able to resolve anxiety about being less than perfect, but they can offer temporary relief. Sometimes this is enough to foster hope that the next consumer addictive “hit” will be it.

So part of our challenge is to “de-materialize” social status and to find non-material ways to meet our needs to communicate about social status, affiliation, affection, etc.¹¹⁰ Our challenge is not only to make basic systems (transportation, housing, energy, etc.) more sustainable, but also to provide ways for people to participate fully in the life of society without recourse to unsustainable material accumulation and unproductive status competition.¹¹¹

The novelty-producing and profit-seeking entrepreneur and the novelty-seeking and status-seeking consumer are mutually reinforcing entities that continuously drive

Need to “de-materialize” social status and participation in the life of society



New Norms:

- Low footprint / high equity
- Prosperity rather than growth
- Maintain and restore ecosystems



Social – Ability

	Motivation	Ability
Structural		
Social		
Personal		

Socially we are motivated or demotivated powerfully by norms. Norms function to control behavior when people look at the reference group with which they identify and ask themselves “What does my ‘tribe’ or ‘club’ implicitly say about this behavior?” From skinheads and white supremacists to businesspeople to peacemakers, social justice advocates and environmentalists, we all look for validation from our key reference groups.

Since social norms are such powerful motivators, it’s no wonder that social groups have great ability to facilitate (or inhibit) change. This recognition leads us to some rules of thumb with respect to facilitating the enactment of the key behaviors:

Affiliate With Or Start a Support Group

From Twelve-Step addiction recovery programs, to medical recovery groups, to therapy groups, support groups of all kinds have had a long history of success in enabling positive change. Part of the success can be attributed to emotional support and to the synergistic powers of group problem-solving. A large part is also due to the fact that the group provides a reference group for validating the norms of new, more effective behaviors.

Examples of pro-sustainability support groups are the connection, reflection, and action groups that arise



	Motivation	Ability
Structural		
Social		
Personal		

from the courses developed by the Northwest Earth Institute.¹¹² Other examples include the discussion/action groups modeled in David Gershon’s *Social Change 2.0*.¹¹³

A support group for the three key behaviors need not be a newly created group with a specific focus on sustainability however. Most people are already members of one or more groups. These might include community groups, neighborhood and block associations, faith-based committees, college and high school classes, extracurricular clubs, service clubs, book clubs, or athletic teams. Any one of these could be engaged to support new norms of behavior.

Build Bridges Between and Among Groups

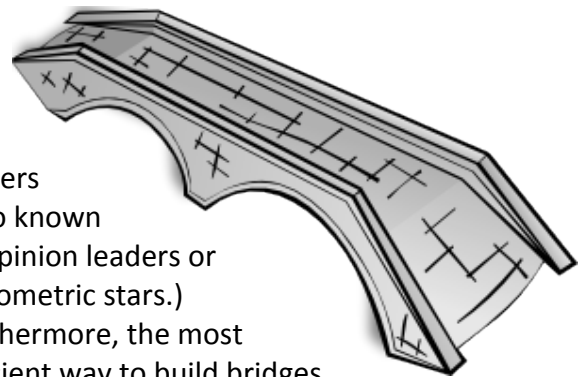
People simultaneously belong to many different ‘tribes’ or ‘clubs’: my circle of friends, my professional colleagues, the other people who pursue the hobbies I pursue, the other people who are fans of my favorite sports team, my neighbors, the others in my socio-economic status, the other members of the formal clubs I belong to, other members of my religion, other members of my political party, etc.

If there is homogeneity among the clubs, i.e. a lot of similarity and overlap, then the potential repertoire of behavior is smaller than it would be if there is a lot of variety and diversity among the clubs.

So the ability to enact new behaviors can be enhanced by increasing the diversity of social reference groups to which one belongs and by building bridges between diverse “clubs”. Reaching out to others who are *not* like you helps create an interconnected world and

increases the potential repertoire of possible behavior for everyone. Since the consequences of our predicament will become harsher as time goes on, intergroup linkages (as well as intragroup membership) should be cross-generational.

People tend to be influenced to change by other people in their social system, especially by those who are informal leaders.^{114,115,116,117,118} We are most likely to say yes to the requests of people we know and like.¹ So the most efficient way to influence groups of people is to influence the informal



leaders (also known as opinion leaders or sociometric stars.) Furthermore, the most efficient way to build bridges between two groups of people is to build the relationship between the informal leaders of the two groups. When the leaders move, the others in their groups will tend to follow.



	Motivation	Ability
Structural		
Social		
Personal		

When joining new groups or building bridges between groups it's important to remember a rule of thumb: connection before content. This means that information flows over the wires of relationship and that motivation evolves through emotional

connection. No individual or group can be positively influenced unless and until you have built a relationship. And the first step in building a relationship involves a lot of empathic listening. Listen and empathize before speaking.

New behaviors and ideas are spread through social networks

Affiliate with or start a support group

Build connections among diverse social groups

“Connection before content” – Rule of thumb

The Social Diffusion of Innovation



There is a large body of knowledge about how new ideas (behaviors or products) spread and become widely adopted throughout a society. (The standard reference is Everett M. Rogers' *Diffusion of Innovations*.¹¹⁹) Diffusion of innovation concepts have been validated in thousands of research studies and field tests. This body of knowledge focuses on the qualities of the innovations themselves and on the networks by which the innovations spread.

Diffusion of innovation research shows that peer networks and peer-to-peer conversations are how a new idea (or product) becomes widely adopted after it is first introduced. Research also shows these peer-to-peer approaches can be highly effective in



	Motivation	Ability
Structural		
Social		
Personal		

producing behavioral changes.¹²⁰ Advertising and media stories may spread information about new innovations, but adoption depends on conversations with people we know. This is because trying out something new involves risk and uncertainty. To overcome this uncertainty, most people seek out others like themselves who have already adopted the new idea.

Thus the diffusion process consists of a few individuals who first adopt an innovation, then spread the word among their circle of acquaintances. Because we want to avoid embarrassment or wasted time or financial loss, we need reassurance that the innovation will actually work. And the most credible reassurances come from those we know and trust.¹²¹ We learn from people we know who have already tried the new behavior and have found that it pays off. And when we first try out new behavior, it is support from our friends that keeps us going.

We depend on our social networks for our subjective sense of social reality and we maintain that social reality partly through our conversations.¹²² Likewise, within our social networks it is our conversations that are largely responsible for propagating change. So generating a positive “buzz” about a given change is essential for success.¹²³

According to Diffusion of Information scholars there are five key qualities that help innovations spread:

1. **Relative advantage.** This is the degree to which an innovation is *perceived* as better than the idea it supersedes. The greater the perceived relative advantage of an innovation, the more rapid its rate of adoption will be.

2. **Compatibility.** An idea that is incompatible with the values and norms of a social system will not be adopted as rapidly as an innovation that is compatible.
3. **Complexity (vs. simplicity and ease of use).** New ideas that are simpler to understand are adopted more rapidly than innovations that require the adopter to develop new skills and understandings.
4. **Trialability.** New ideas that can be tried on in bite-sized pieces or in low risk situations will generally be adopted more quickly than innovations that cannot.

The three key behaviors will be most likely to spread if they are presented in ways that

- Show they are superior ways of meeting needs
- Show they are consisted with existing values and past experiences
- Make them simple and easy to apply
- Allow them to be tried out on a low-risk / small scale basis at first
- Deliver observable results



	Motivation	Ability
Structural		
Social		
Personal		

5. **Observability (of results).** Such visibility lowers uncertainty and stimulates peer discussion of a new idea, as friends and neighbors of an adopter often request evaluative information about the innovation.

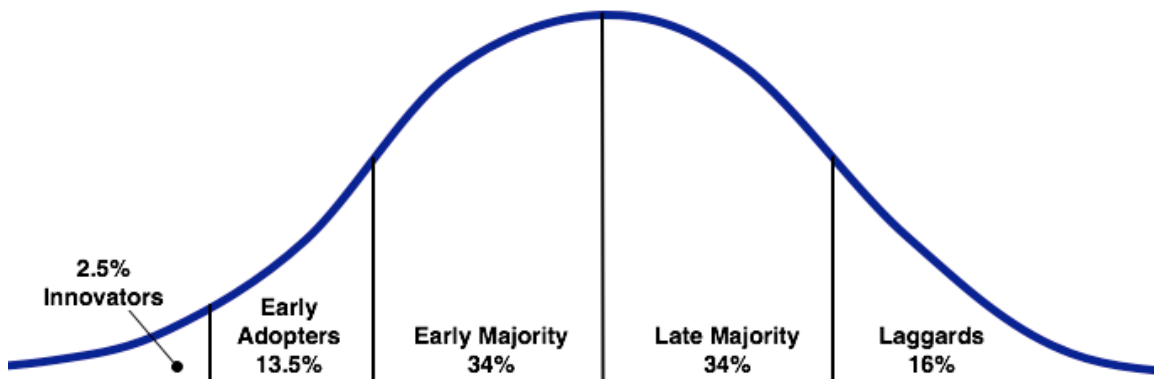
According to Everett Rogers, these five qualities determine between 49% and 87% of the variation in the adoption of new products. Notice that these qualities are qualities of the innovation, not of the social systems.

Diffusion researchers believe that a population can be broken down into five different segments, based on their propensity to adopt a specific innovation. Each segment has its own attitude toward innovation. For each group there is a corresponding persuasive approach that is most compatible to the attitude.

- **Innovators** are the first 2.5 percent of the individuals in a system to adopt an innovation. They tend to be visionary, imaginative people who enjoy spending time and energy developing new ideas. Their intensity of focus can sometimes make them seem unrealistically idealistic to

more practical people. But their success with a new idea or gadget makes its potential benefits observable and ignites the interest of the next segment.

- **Early Adopters** are the next 13.5 percent. They tend to be people who like to be seen as leaders, driven by a desire for social prestige. They often have time and money to invest and are on the lookout for ways to advance their businesses and/or personal lives. Early adopters are crucial for diffusion of innovation because adopters who come later tend to emulate the first followers rather than the innovator (who may be seen as too eccentric).
- **Early Majority** is the next 34 percent. They will adopt if the Early Adopters seem successful and if the innovation seems easy enough to use and sufficiently advantageous in terms of time, money, or effectiveness. They tend to be cost sensitive and risk averse. They like solutions that are simple and ready to use.



Source: Everett Rogers (Diffusion of innovations model)



	Motivation	Ability
Structural		
Social		
Personal		

- **Late Majority** is the next 34 percent. They tend to be conservative and risk-averse. Their main motivation for trying something new is that they want to avoid being different from the rest of society.
- **Laggards** are the last 16 percent to adopt an innovation. They are the ones who view the new jar as half empty rather than half full.¹²⁴

A critical mass in the diffusion process occurs when enough individuals have adopted an innovation that the innovation's further rate of adoption becomes self-sustaining.

Diffusion of innovation is not a question of turning Laggards into Innovators, or even into Late Majority individuals. It is a question of the innovation evolving to meet the needs of each segment and then being communicated effectively from segment to segment, and among persons within segments, through social networks. Reinvention is a key principle in diffusion of innovations. The success of an innovation depends on how well it evolves to meet the needs of more and more demanding and risk-averse individuals.

Our three key behaviors need to be presented in ways that make them advantageous, easy to use, easy to try out, and delivering of visible results for each population segment and also compatible with the values and expectations of each segment.

The approach of segmenting the population yields a key insight: If you know approximately how much of a population has

already taken up the innovation you can have a good idea about which population segment you need to address *next*.

The Yale Project on Climate Change Communication and the George Mason University Center for Climate Change Communication, have been jointly conducting an ongoing program of research analyzing Americans' interpretations of and responses to climate change. Their "Six Americas" research segments the American public into six audiences that range along a spectrum of concern and issue engagement from the "Alarmed", who are convinced of the reality and danger of climate change and highly supportive of personal and political actions to mitigate the threat, to the "Dismissive", who are equally convinced that climate change is not occurring and that no response should be made.¹²⁵ According to the Six Americas report of March 2012 the "Alarmed" were 13% of the population.¹²⁶

If we take the "Alarmed" as a rough proxy of the percentage of the population who might adopt the three key behaviors, Diffusion of Information principles suggests that we might be on the diffusion threshold between the early adopters and the early majority. It's likely that most early adopters have very different interests and needs from most early majority people. So to cross the diffusion threshold we need to bear in mind the early majority's preferences for simplicity, solid proof, low risk, minimum disruption, minimum commitment of time, minimum learning, and either cost neutrality or a rapid payback period.



	Motivation	Ability
Structural		
Social		
Personal		

Foster Joint Action

Humans may be unique among mammals in the extent to which they cooperate with others. But it is also true that humans are almost unique in the extent to which they willing to annihilate members of their own

the groups can see their interdependence. Otherwise the crisis might devolve into further competition over a diminishing pool of resources among an ever-increasing number of smaller and smaller “tribes”.



species that do not belong to the “in” group or “my tribe”.

A classic social science experiment shows that the best way to resolve intergroup conflict is to get the groups to work together to solve a common problem.¹²⁷ Simply having groups share facilities or share activities is not enough. The key is working together to solve a common problem. Saving civilization is definitely a common problem and thus has the potential to reduce intergroup conflict if, and this is a big if,

If we can align our social structures to promote a sense of “we’re all in this together” and somehow necessitate different groups to work together in solving aspects of our common problem, we might stand a chance of avoiding a fall into barbarism. The danger of course is that we see the problems as being caused by other humans. We have evolved to be especially responsive to threats from other (hostile) humans.



	Motivation	Ability
Structural		
Social		
Personal		

Build Community

People have more ability to take effective social action in communities with a lot of “social capital”. The success of the Montgomery Bus Boycott, for example, was due in part to the large reservoir of social capital in the Black community.¹²⁸



Social capital refers to the collective value of all “social networks” [who people know] and the inclinations that arise from these networks to do things for each other [“norms of reciprocity”]. Robert Putnam, author of the groundbreaking *Bowling Alone*,¹²⁹ gives some examples of social capital:

”When a group of neighbors informally keep an eye on one another’s homes, that’s social capital in action. When a tightly knit community of Hassidic Jews trade diamonds without having to test each gem for purity, that’s social capital in action. Barn raising on the frontier was social capital in action, and so too are e-mail exchanges among members of a cancer support group. Social capital can be found in friendship networks, neighborhoods,

churches, schools, bridge clubs, civic associations, and even bars.¹³⁰

When communities have been damaged through anti-social acts (violence, vandalism, theft, etc.), social capital can be rebuilt through processes of restorative justice, which bring the affected parties together to heal the harm.¹³¹

True prosperity consists in part in our ability to participate in the life of society. But as Putnam shows, our stock of social capital has been in decline. By strengthening our social networks we can increase our ability to enact the key behaviors, because we will have strength and solidarity in numbers. We will not be as susceptible to being picked off one by one as individual “consumers.”

Engage Social “Commitment Devices”

Human beings have a “present bias”, that is we tend to favor today over tomorrow. Societies have developed a number of social norms for behavior (marriage for example) to moderate this bias so as to protect our own future interests. Unfortunately, the immense social pressure (mediated through mass media) for consumption and immediate gratification, coupled with the idealization of individualism (in mainstream American culture at least) have combined to undermine these commitment devices.¹³²

There have been some interesting attempts to harness the present bias to achieve positive outcomes. Inadequate saving for retirement, for example, is due in part to present-biased preferences when people are

	Motivation	Ability
Structural		
Social		
Personal		

not willing to make immediate sacrifices to save money for the future. A pilot project by Thaler and Schlomo called Save More Tomorrow (SMarT) asked people to commit a portion of their pay increase for *next year* to increasing their 401k set-aside. Since the pain was not immediate, and because of our human preference for consistency when we make commitments¹³³, the program was quite successful. A high proportion (78 percent) of those offered the plan joined and the average saving rates for SMarT program participants increased from 3.5 percent to 13.6 percent over the course of 40 months.¹³⁴

It's clear from all the above that the social context within which people operate shapes both motivation and ability at the personal level. Individuals determine what behavior is and isn't "appropriate" by gleaning information from their own observations of their peers and from interactions within their sphere of social influence. Individual behavior usually makes social sense, though it may not make rational economic sense. Individual behaviors are not only shaped by the social context but also are the foundation for social behaviors, and these in turn make possible structural changes.

- Reduce intergroup conflict by fostering joint action to solve a common problem
- Build community
- Engage social commitment devices



FreeDigitalPhotos.net – "Silhouette Couple Walking" by sattva

Personal Level

Personal behaviors, even by themselves, can have a big impact. For example: non-LEED buildings have outperformed LEED buildings as a result of occupant behavior alone.¹³⁵ Researchers with the National Resources Defense Council (NRDC) and the Garrison Institute estimate that if individual Americans adopted a series of simple and inexpensive emissions-reducing measures in the areas of transportation, household energy consumption, diet, and waste over the next ten years, the U.S. could potentially avoid 1 billion tons of greenhouse gas emissions annually.¹³⁶ This raises the question of how we motivate and enable these actions.

Habits

Before discussing individual motivation and ability to enact the three key behaviors, we should acknowledge at the outset that much of our personal behavior is governed by habit and routine. We don't think much about many of the things we do, we just do them. This is adaptive and functional for us much of the time. Deciding what to do takes time and

Much of our behavior
is habitual

Habits conserve our
decision-making
energy

Consciously thought-
out behaviors *can*
turn into habits

energy, so when we find a choice that works for us we generally just do it again when needed and save our mental “heavy lifting” for major decisions and novel situations.

The automaticity of much of our behavior is one of the reasons that structural interventions are so powerful. When we want to have light in a darkened room our habit is to turn on the light switch. If our electricity comes from renewable sources, our habit automatically makes the “low footprint” choice for us. If our electricity comes from fossil fuel, our habit works against us.

Consider all the things you do each day, from your morning routine, to how you get your meals, to how you get to work or school, to where you shop, to how you deal with your trash / recyclables/ reusables /compost. How much is governed by habit or routine? A good deal of it...if you’re like most people.

Now consider the last time you tried to change a habit. It was easy, right?

It is indeed possible to change one’s habits, but for most people the process is effortful and time-consuming. Back in the 1890’s William James called habit the “enormous fly-wheel of society” and, continuing this metaphor, modern behavioral psychologists sometimes refer to “behavioral momentum.”¹³⁷ Some habits, such as using private automobiles, have huge behavioral momentum and are difficult to change. Social support (supportive norms from your reference group) can be a big help in changing habits. And, as mentioned above, structural changes can make all the difference.

Habits and reasoned action can be considered as two extremes of a continuum. Before a given behavior becomes a habit, the behavior starts with deliberate decision-making, involving aspects of motivation and ability. With continued repetition and more practice the underlying decisional process

gradually shifts from a more consciously reasoned one to a rather automatic one. Eventually a habit forms that no longer needs to be guided by reasoned considerations. Now let’s look at behaviors *before* they become habits.

Personal – Motivation

	Motivation	Ability
Structural		
Social		
Personal		

What energizes a person’s behavior and directs it toward a goal?

The initial impulse for an individual to do something new comes from a sense of dissatisfaction with the way things are. This happens because life itself is characterized by unsatisfactory-ness. If you don’t have what you want, you are dissatisfied because you don’t have it. If you do have what you want, eventually you recognize that the having is temporary, and you are dissatisfied with the temporariness of the having. As is clear from simple observation, eventually we all succumb to sickness, old age, and death.¹³⁸

So at some level we are all motivated to relieve the sense of dissatisfaction.

Our Most Pressing Needs Tell Us What to Focus On

You may have heard of “Maslow’s Hierarchy” of human needs. Psychologist Abraham Maslow suggested that there is a core set of common human needs and that they can be arranged in a hierarchy, because people tend to try to satisfy the more basic needs before they have time and energy to exert in satisfying the higher needs.¹³⁹

Here is Maslow’s hierarchy (highest to most basic):



	Motivation	Ability
Structural		
Social		
Personal		

- Self-actualization
- Self-esteem
- Social Connection / Belongingness & Love
- Safety & Security
- Physiological - for air, food, water, shelter, etc.

The specifics of an individual’s sense of dissatisfaction will depend on where the individual stands on this hierarchy.

Outer Healing = Inner Healing

The world’s wisdom traditions teach that spiritual and psychological wholeness is not possible without a respectful, reciprocal relationship with the natural world.¹⁴⁰ Much of the contemporary dis-ease in our society, including issues at Maslow’s levels of Social Connection / Belongingness & Love, Self-esteem, and Self-actualization, would be healed by improving our relationship with the natural world.

Current research supports traditional wisdom. Various studies have linked relationship to the natural world with lowered levels of job stress, imaginative ability in children, and quality of life.^{141,142,143} One extensive study of postoperative gall bladder patients showed that patients whose rooms looked out on trees recovered faster than patients whose view was of a brick wall.¹⁴⁴ Practicing the three key behaviors would move us toward healing.

Much of humanity’s earliest psychological wisdom was held and transmitted through mythology. A pair of ancient myths express through metaphor the relationship of our inner psycho-spiritual

world with the outer world of nature. They warn of what is happening to us at the interior soul level because of our global crisis. Both are instructive warnings from our wise ancestors about what can happen to the human soul when we go off track.

In both of these stories the protagonist is the ruler of a kingdom. The ancient way of thinking held that the fate of a community was inextricably linked with the fate of its ruler. So these stories are not only warnings to individuals about individual behavior, but also warnings to communities about communal behavior.

If it’s not a habit,
then...

Our most pressing
needs tell us what
to focus on

Outer healing and
inner healing go
together

One definition of enlightenment is the experience of the interconnectedness of all things.

Most of you have probably heard of “the Midas touch.” Midas was an ancient king who loved both pleasure and gold. At one time Midas took good care of a certain wandering satyr who was a favorite of the god Dionysus. Wishing to reward Midas for his kindness, Dionysus asked Midas what gift he would like to receive. “Grant that all I touch be turned into gold,” Midas said. At first Midas was overjoyed that he could turn mere stones into lumps of solid gold. But when his bread and meat also turned to gold and his drink into golden ice he began to panic. Then suddenly his beautiful



little daughter jumped into his lap and was transformed into a golden statue.

When we monetize everything, to the extent even of putting a monetary value on “ecosystem services”, we behave just like Midas. We should remember that

there are no “ecosystem services” if there is no ecosystem. What is important is to preserve the ecosystem, which is actually priceless. Through our relentless pursuit of profit, like King Midas we stand to lose not only our food and drink (through climate collapse as described earlier) but also the affection of our “daughter” – the coming generations who will suffer greatly.

Less well known these days than Midas is Erysichthon, another ancient king. He had so little respect for the natural world that he cut down all the trees in a sacred grove. The earth goddess Ceres, outraged, summoned the goddess Famine to punish Erysichthon. That

very night Famine came while the king was sleeping, wrapped her emaciated body around his, pressed her dry cracked lips against his, and kissed into him an insatiable hunger.

In his sleep he began to grind his jaws, dreaming of food. After he awoke he soon depleted the treasury of his kingdom in purchasing feasts that brought no fill. Eventually he sold his own daughter to buy food. When both food and daughter were gone, with no other recourse, he bit his greedy teeth into his own flesh and soon consumed his own body.¹⁴⁵

Before you scoff at this account as “a mere myth”, consider it rather as a metaphor for how we are depleting the earth, and recall the assessment by the Earth Policy Institute: “It becomes ever more likely that food is the weak link that could bring down our global civilization.”¹⁴⁶

What we do to our outer selves we also do to our inner selves. One definition of enlightenment is the experience of the interconnectedness of all things.



	Motivation	Ability
Structural		
Social		
Personal		

Behavioral models
show us what is
possible

We then consider
specific questions

Information alone does
not motivate

Behavioral Models Show Us What is Possible

Whenever we are interested in satisfying a need, we search around to discover how we might satisfy that need. The *direction* we choose and the steps we take in order to relieve the sense of dissatisfaction depend on our mental models, especially our role models.

We all hold in our minds models about how the world works and about how we should act. We hold these mental models in the form of images of what the ideal world or ideal behavior should be, and images of actual situations and actual behavior by people who are our "role models." Even as very young children we begin to make sense of the world by building mental models and then using these models to incorporate or assimilate new experiences.¹⁴⁷ Mental models function both as filters through which we see the world and as templates for our own actions.

A remarkable experiment by psychologist Albert Bandura vividly demonstrates the power of models. In this experiment a nursery school child is playing quietly. In another part of the playroom an adult stands up and begins punching and kicking an inflatable punching doll which has a weighted bottom so it always bounds back up. The adult keeps punching and kicking for nearly ten minutes, all the while yelling things like "Sock him in the nose....Hit him down....Kick him!" Then another adult leads the child away to a new playroom filled with many lovely toys. The child resumes playing happily. In only a few moments however the experimenter returns and explains that she has decided to save these fine toys "for the other



	Motivation	Ability
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Personal		

children." She takes the frustrated child to another playroom containing only a few poor toys--and an inflatable punching doll. What does the child do after it is left alone?

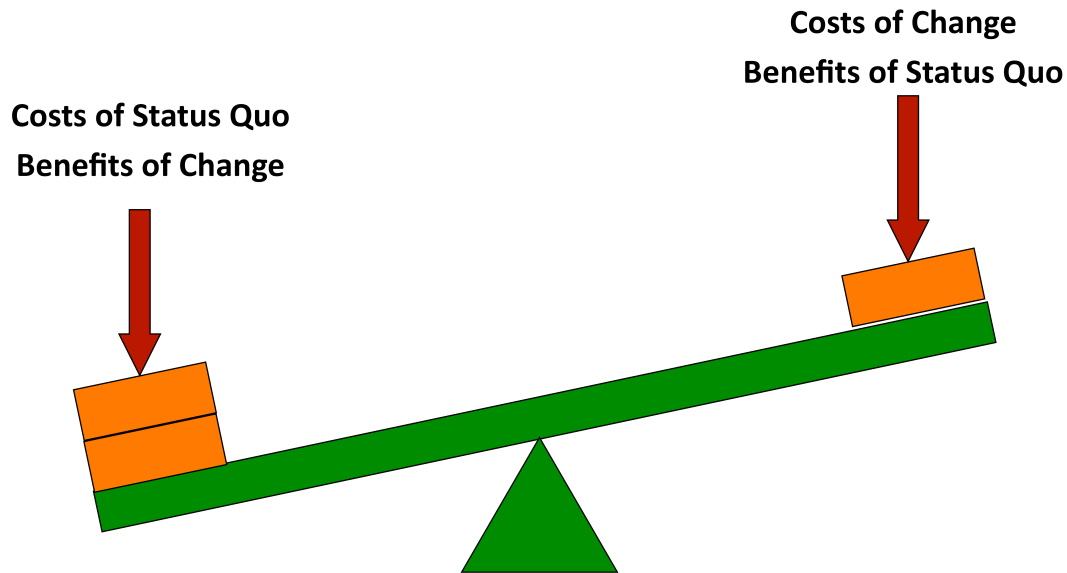
Compared with children who had not seen the punching and kicking, children who had observed the behavior modeled by the adult were much more likely to attack the doll. Furthermore these children usually copied the adult's exact words and actions.¹⁴⁸

Consciously or unconsciously we humans tend to select role models that give direction to our personal change. We learn about the models through observation, as in the case of the punching doll, or through literature, media, and other modeling available to us through our milieu. (And, as discussed above, mental models or images influence whole societies as well as individuals.) Having a positive mental model or self-image of how you will be in the future is a good predictor of both cognitive growth and academic success.¹⁴⁹

The most effective role models are often people who are not full masters of the skill or innovation but are simply a bit more advanced than we are.¹⁵⁰ As mentioned above, members of one's peer group can often be effective role models.

Feeling dissatisfied with the current situation and having a mental model of the direction that might relieve the dissatisfaction, we tend, for better or worse, to change. The perceived discrepancy between present outcomes and one's mental model of expected future outcomes motivates the change in behavior.

Role models help us visualize ourselves doing the new behaviors



A Decisional Balance

Do People “Resist Change”?

A major common misconception about personal change is that people resist change. People do not resist change if the benefits are apparent and the emotional costs or losses associated with the change are not too high. Consider changes such as these: Would you resist accepting a 15% raise? Would a teenager resist getting a driver’s license? Would you resist marrying the person you love? In deciding to make a change people resolve an internal decisional cost/benefit balance. People *do* resist change if the perceived benefits are too low and/or the perceived costs are too high.

Perceived costs include several types of risks: functional, physical, financial, social, psychological, temporal. For example, take the low-footprint option of purchasing a plug-in hybrid electric vehicle instead of a conventional gasoline powered vehicle. “Will it work or work as advertised?” is the functional risk question. “Is it safe?” (Physical risk.) “Is the payback period too long?” (Financial risk.) “Will others laugh at me?” (Social risk.) “Will my self-esteem be damaged?” (Psychological risk.) “Is the whole thing a waste of time?” (Temporal risk.)¹⁵¹

Often, what is taken as “resistance” to change is simply ambivalence about change: In the mind of the person considering the change, the benefits and costs of the change appear to be equal. In order for the change to take place, the balance has to tip toward making the change.¹⁵²

People do tend to resist change, however, if they feel coerced. This tendency has been well documented as “psychological reactance”.¹⁵³

There is a newspaper cartoon that shows two people standing on a sidewalk next to a sign that reads “No Unicycles Beyond this Point”. One person says to the other, “Y’know...up until now I never had the urge to ride a unicycle.”¹⁵⁴ This is reactance.

Whenever our personal control or free choice is limited or threatened, we tend to *react against* the interference. The reaction includes working to maintain our freedom of choice. When the limitation is in the form of restricted availability of something, we experience an increased desire for that



	Motivation	Ability
Structural		
Social		
Personal		

something. This is one of the psychological underpinnings of advertisements that say things like “Limited quantities available. Act right now!”

Psychological reactance means that attempts to force change can backfire. Both the rate and attractiveness of problematic behavior will increase if a person believes that his or her personal freedom is being infringed upon.

When consciously deciding to do something, we consider these questions:

- What is the social context?
- Is it important?
- Is it urgent?
- Can I take effective action?

We Consider Specific Questions

Our intention to carry out a planned behavior depends on our assessment of several questions.¹⁵⁵ One question is: “What is the social context?” What is our subjective perception of the social norms relative to the behavior? The social context question was discussed above under Social Motivation. Much of what influences motivation at the personal level depends on motivational factors at the social level.

Another question is: “Can I take effective action?” This has to do with what is called “perceived behavioral control” – our perception of how easy or difficult it will be to perform the behavior. Perceived behavioral control affects motivation. In order to change we have to feel some confidence that we are *able to* make the change without embarrassment, humiliation, loss, or injury.¹⁵⁶ I will discuss this question in more detail below under Personal Ability.

The other questions have to do with our “attitude toward the behavior.” Even if we feel confident that we can take effective action, our internal decisional balance about performing a given behavior will only tip toward change if our attitude is that the change is *both* important *and* urgent. Another way to summarize these conditions is that a person has to be “ready, willing, and able” to change (urgency, importance, and ability).

Note that it is quite possible for a person to believe that a change is important but not to feel a sense of urgency about it. (“I know I should quit smoking; I’m just not



	Motivation	Ability
Structural		
Social		
Personal		

ready to do it.”) The often-recognized gap between attitude and behavior can be seen as the difference between Importance and Urgency.

Is It Important?

Wherever you are on Maslow’s hierarchy, the new state – the one you’re headed toward – has to be seen as important. People must believe that the changed behavior will result in an outcome that matters. Sustained behavior change means that people will have to reinvest their own time and energy to maintain the changed behavior. And they will only do that if they are getting something that credibly addresses a real issue in their lives.

What do people desire? I believe we all want security, jobs, health, and happiness. More specific desires include exercising autonomy, being respected for our competence, having a sense of community or relatedness, and, if we have children, to have them be happy and healthy. Psychologist Erik Erikson says that as people mature they enter a stage of life where they want to give something back to the world.¹⁵⁷ This stage of “generativity” is an essential stage in the living a fulfilled life. Other desires have to do with reducing our frustrations, both day-to-day frustrations and deeper personal frustrations that hinder us from realizing our dreams. Organizational behavior expert Les Robinsion suggests that three of the most important desires are for control, time, and self-esteem.¹⁵⁸

Importance at Various “Layers”

Everyone is motivated at several different levels, and different outcomes are

important at each level. These levels are like the layers of an onion.

As the layers get closer to the center, the motivations are said to be increasingly autonomous or “self-determined.” The outer layer is the one most easily influenced by the external world. The innermost layer, closest to the core self, is the most self-determined and most resistant to change from the outside.¹⁵⁹ It’s helpful to be aware



FreeDigitalPhotos.net – “Whole and halved onion” by bplanet

of the different layers, since working with each layer involves a different approach. It’s also helpful to recognize that different people are differently motivated and that what people *say* motivates them is not necessarily what *really* motivates them.

Layers Influenced by the External World

At the outermost layer of the motivational onion (“External”), people are motivated by obtaining an external reward or avoiding an external punishment. An example would be a worker whose *only* motivation is to get a paycheck on Friday. As a change lever, external regulation involves



	Motivation	Ability
Structural		
Social		
Personal		

the use of incentives, rewards and sanctions. In terms of our three key behaviors, this is the layer that could be most influenced by Structural factors such as financial incentives, rules, and regulations.

The next deeper layer of the onion (“Introjected”) involves acting to avoid guilt or anxiety or to achieve socially validated self-



esteem. An example would be a man who believes that he is worthy only if he has expensive possessions. Therefore, he is likely to feel compelled to buy certain

products, especially when he believes that having them yields approval. This layer is somewhat more autonomous than external regulation. The introjected motivation is within the person, but its operation is primarily controlled from outside rather than being autonomous.

As a change lever this layer involves the use of social norms or guilt or a sense of duty. In terms of our three key behaviors, this is the layer that could be most influenced by Social factors such as the norms of one’s reference group.

The third layer of the onion (“Identified”) means acting in accordance with felt personal values. An example would be changing a baby’s

diaper not because you got paid to do it as a babysitter (“External”) nor because you would feel guilty if you didn’t (“Introjected”) but because you care about the baby and believe in hygiene as a value. This level of motivation occurs when the person values the behavior, identifies with its importance, and integrates it into their sense of self.

It is possible for people to grow to accept as their own motives that were originally foreign. We internalize External motivations and Identify with them as our own. Once this process is successfully completed, external rewards or punishments may no longer be necessary, because the behavior will have become self-determined.¹⁶⁰ (A process similar to

Generating Importance at different “layers”:

- **Structural factors (feedback, incentives) create importance at the layer of external rewards / punishments**
- **Social pressures (norms) create importance at the layer of guilt and pride**
- **Appeals to values create importance at the layer of personal values**
- **When the behaviors are enjoyable in and of themselves they become intrinsically important**



	Motivation	Ability
Structural		
Social		
Personal		

this may have been responsible for the influence of externally enforced military desegregation on the gradual integration of the wider society as discharged veterans brought their identified motivation into civilian life.)

As a change lever, Identified regulation involves changing behavior through appealing to personal values. For example, people who work in the health care industry, for whom preserving health is a strongly held personal value, can be easily convinced of the value of sustainability when sustainability is explicitly presented as an issue of health.¹⁶¹ Our three key behaviors could all potentially be Identified motivation, since they all can accord with deeply held personal values.

Values & Moral Intuition

At the Identified layer, we can be powerfully motivated by our moral intuition. Moral intuition refers to the fast, automatic, and usually emotionally charged judgments we make about liking/disliking or about the goodness/badness of a person, thing, or action. It’s possible that one of the reasons we don’t see more public action on climate disruption is that the issue does not register morally as a wrong that demands to be righted.¹⁶²

Moral intuition is different from moral reasoning, which is a slower, more rational process of weighing arguments and evidence in order to arrive at moral decision or judgment, usually one that will support our initial intuitive reaction.¹⁶³

A strong moral intuition can create a sense of Urgency. I’ll discuss Urgency in more detail below.

Moral Intuition
 Is the fast, automatic, and usually emotionally charged judgments we make about liking/disliking or about the goodness/badness of a person, thing or action
 Affects motivation at the personal values layer
 Influences sense of Urgency



	Motivation	Ability
Structural		
Social		
Personal		

Current research suggests that there are five psychological foundations of moral intuition. All of them have roots in human evolution. All of them give rise to moral intuitions across cultures. What is especially fascinating is that only two of them seem to resonate with self-identified liberals in American culture while all five seem to resonate with self-identified conservatives. This difference may be one of the reasons why liberals and conservatives sometimes find it hard to communicate with each other.¹⁶⁴

Liberals tend to base their moral priorities on the foundations of harm/care and fairness/reciprocity. These foundations are related to the ethic of autonomy. Conservatives rely on three additional foundations, which liberals may not even recognize as moral foundations. Yet the additional foundations do appear in other cultures around the world and do have roots as having been adaptive in the history of human evolution. Two of the additional foundations have to do with the ethic of community. They are in-group loyalty and respect for authority. (Respect for authority may overlap with the “hierarchical” worldview discussed earlier.) To these foundations conservatives add a fifth, which has to do with the ethic of divinity: the foundation of purity/sanctity.

In terms of our present discussion, this understanding of moral intuition suggests that the rationale for the three key behaviors should include not only reasons related to preventing harm to the planet and to ensuring fair treatment of all beings, but also related to loyalty to humans as a species and recognition of people who make sacrifices for our well being

as well as related to respect for leaders who work to protect us and also related to our sacred obligation to be good stewards of our planet and to protect the sanctity of the natural world.

Our moral intuition around the dimension of purity / sanctity may have untapped potential for positive change. Surely the sense of the sanctity of the natural world resonates with the traditions of earth-based first nation peoples in addition to political conservatives. Studies show that many people, not just political conservatives, experience distress when a valued natural environment is negatively transformed.^{165,166,167} Groups such as the National Religious Partnership for the Environment are organizing around the sacredness of not only the natural environment but of “all creation”.¹⁶⁸ Our challenge in harnessing moral intuitions around purity / sanctity is in presenting information in a way that does not trigger denial. (See the discussion of denial, below.)

Values Resonance

Liberals

- harm / care
- fairness / reciprocity

Conservatives add

- in-group loyalty
- respect for authority
- purity / sanctity



	Motivation	Ability
Structural		
Social		
Personal		

Intrinsic Layer

The deepest layer of the motivational “onion” is Intrinsic motivation. Intrinsic is like Identified in that both are close to the core self. Intrinsic differs in that Identified is based on valuing the behavior as meaningful whereas Intrinsic is based on interest and enjoyment. Intrinsic motivation means you do something because you find the activity itself interesting, spontaneously enjoyable, and satisfying – for example: hobbies, recreational sports, personal projects, and (sometimes) work. Intrinsic rewards are the psychological rewards you get directly from doing a task well.

The depth and power of intrinsic motivation brings up a potential pitfall of over-reliance on extrinsic motivators. If a person who is intrinsically motivated to perform an activity receives extrinsic reinforcement for doing it, intrinsic motivation may decrease, thereby decreasing the likelihood of the behavior if the extrinsic rewards were to be removed.^{169,170}

Studies show that the more internalized (or self-determined) the motivation, the more likely that the pro-environmental behaviors will be sustained. “Participants who felt self-determined in their motivations seemed to enter an “upward spiral” of positive change, in that they were then more likely to perform well, which in turn tended to promote intentions to keep on behaving after the study’s conclusion.”¹⁷¹ On a long-term basis the more internalized layers are more successful in instilling long-term behavior change than things like monetary rewards or removing barriers by making behaviors more convenient or using persuasive communication strategies.¹⁷²

Furthermore, the more internalized (or self-determined) the motivation, the more often people will undertake pro-environmental behaviors and the more likely it is that those behaviors will be the more difficult ones (e.g. educating oneself regarding environmental behaviors) rather than the easier ones (e.g. recycling newspapers).¹⁷³

Importance Undermined by Denial, Habituation, and Lack of Knowledge

Given the scale of our planetary crisis, it would seem logical that the Importance of taking action should not be in question once people are aware of the crisis. Unfortunately, even today some people are not even aware of our problems or are not aware of the causes and extent of the problems.¹⁷⁴ Not knowing that a problem exists, and not knowing enough about the problem are barriers to recognizing the Importance of the issue. And if people can't identify with reasons for engaging in pro-environmental behaviors, they often lack the desire to learn more about the behaviors.

Sometimes also people want to avoid the work of more mental "heavy lifting", so they decide they know enough about a topic and avoid taking in additional, especially contradictory, information. This tends to happen especially when people feel under stress due to time pressure, fatigue, or the like. Reaching "cognitive closure" is essential to our mental functioning.¹⁷⁵ Otherwise we would never decide anything. But people with a very high need for closure may not be open to taking in new information that might make new behaviors Important.

Nevertheless, a lot of information about our planetary crisis is widely available. But knowledge by itself is not sufficient to produce action.¹⁷⁶ This raises another question: Why do so many people *not* seem motivated to do something about the crisis? The answer to this question involves a mutually reinforcing interaction among social motivation (social proof and norms, discussed above), denial (which affects both Importance and Urgency), habituation, and Ability factors ("self-efficacy" and "learned helplessness").



Denial

As individuals living in a social context we have psychological processes that help mediate between the inner demands of the self and the signals arising from the outside world. These processes seek to establish a sense of consistency or inner calm.^{177,178,179} Lack of consistency creates dissonance, which we seek to eliminate by one of these methods: (1) resolving the dissonance or (2) displacing it or (3) denying it.

In our present case, "resolving the dissonance" would mean actually taking action to resolve our predicament.

"Displacement" means redirecting emotions and efforts from a situation felt to be dangerous or unacceptable to some other behavior felt to be safe or acceptable. Displacement can happen even if the newly selected behavior fails to resolve the situation or even makes it worse. Unfortunately, one way people displace their anxiety about the world situation is by seeking gratification through continued or increased material acquisition and consumption.



	Motivation	Ability
Structural		
Social		
Personal		

“Denial” is perhaps the most basic defense mechanism of the human psyche. When something unacceptable happens or is about to happen we simply deny that it has happened or is about to happen. Often this rejection happens in the face of overwhelming evidence to the contrary.

Denial can be adaptive under certain circumstances and for short periods of time, as for example when it helps us adapt to new circumstances in bite-sized pieces rather than be emotionally overwhelmed by them, or when it helps us take care of vital practicalities (e.g. bandaging wounds) and put off the important emotional work (e.g. grieving) to a more opportune time. Elisabeth Kübler-Ross lists denial as the first of five stages in the psychology of dying. It can exist in both the patient and in the reactions of survivors to news of a death.¹⁸⁰ Denial comes in several flavors, including:

- **simple denial:** I deny the reality of the unpleasant fact altogether. Simple denial happens because people don’t like to hold conflicting ideas, beliefs, or values simultaneously, and so are motivated to reduce the *cognitive dissonance* by changing one of the ideas, beliefs, or values.^{190,191} Psychologist Robert Gifford gives this example: “If a person has a direct financial stake in the fossil fuel industry, cognitive dissonance can result from hearing that burning these fuels damages the environment. Cognitive dissonance often is easier to reduce by changing one’s mind (“burning these fuels is not causing a problem”) than by

changing one’s behavior (by disposing of one’s fossil fuel investments or leaving one’s job in that industry).”¹⁹²

- **minimalization:** I admit the fact but deny its seriousness (a combination of denial and rationalization). There is considerable evidence that people generally tend to discount personal risks as well as environmental risks and also to undervalue risks that seem far in the future.¹⁹³
- **projection:** I admit both the fact and seriousness but deny responsibility.
- **wishful thinking:** (also called “motivated reasoning”). I try to believe something else is or will be true.

The planetary crisis is so overwhelming that denial is an attractive strategy. I must confess that even though I am convinced by the evidence of the crisis and am passionately concerned about helping create a viable future, I find myself falling into a comfortable denial from time to time. (I just hope that this is an adaptive use of denial that helps me regroup and rebuild energy for the next phase of the work.)



	Motivation	Ability
Structural		
Social		
Personal		

I find I am not alone in being tempted by denial. A study coming out of the Swiss Integrated Climate Risk Assessment Project conducted focus groups of Swiss citizens. Swiss citizens generally perceive climate change risks to be a serious issue and see a high fossil fuel energy future as “rather unattractive, if not nightmarish” according to the study.¹⁹⁴ Yet even the Swiss groups found ways to deny responsibility to act.

Socially organized denial can also be a factor. For example, in an analysis of a rural Norwegian community non-responsiveness to climate change was partly due to a social norm of denial.¹⁹⁵ Because Norwegian prosperity is tied to oil production, collective denial of climate change maintains the community’s economic interests. (Ironically this real-life situation echoes the theme of “An Enemy of the People” by Henrik Ibsen, the great playwright of Norway.)

For many individuals, information about the potentially dire consequences of global climate change threatens deeply held beliefs that the world is just, orderly, and stable. Individuals overcome this threat by denying or discounting the existence of climate change, and this process results in decreased willingness to do anything about it. Studies suggest that messaging that is less dire could be more effective in promoting acceptance and action.¹⁹⁶

Creating a sense of Urgency about the three key behaviors is therefore a case of threading a needle. The information and predictions need to be enough to create a

Threading the Needle: A sense of Urgency is essential, *but*:

- Facts and predictions that are overly dire, remote, and global trigger denial
- Facts and predictions that are local, specific, concrete, and actionable tend to evoke positive response.

sense of urgency but not so overwhelming that they trigger denial. Although fear-inducing representations of climate change are widely employed, fear has been shown to be generally an ineffective tool for motivating genuine personal engagement. This is partly because people have a limited capacity for worrisome concerns, a “finite pool of worry.” More importantly, when individuals are confronted with risks that seem beyond their control to manage, and then given little information about what can be done, they cope psychologically by denying the risk (e.g. “other people will get cancer, but not me” or “the impacts of climate change won’t affect me). Or they cope by becoming fatalistic and apathetic.¹⁹⁷

Communication about climate change (and presumably about the other aspects of our predicament) is most effective when it takes into account individuals’ personal values, attitudes, beliefs, local environment and experiences. Effective communication must also take into account people’s other concerns and other everyday pressures.¹⁹⁸ Research has shown that even audience segments who tend to dismiss the validity of climate science or the problem of climate change respond favorably to mitigation-related policy actions when they are presented in the context of specific local or personal benefits to public health.¹⁹⁹

Habituation - Human adaptability blinds us to the urgency of the situation

Habituation

Denial is abetted by the phenomenon of habituation, which is similar to the phenomenon of shifting baselines, first identified in marine biology.²⁰⁰ Simply put, habituation means that we get used to how things are. When the planet is changing over a long term relative to a human life, say hundreds of years or even decades, the changes do not appear to us to be that substantial. Think of the population of the town or region in which you live. The changes within the last year or two may not seem that significant; but think back a few decades, and then consider that perhaps a few hundred years ago (a blink of an eye in geologic time), your area was virgin forest or untouched prairie. We get used to how things are, and psychologically this helps us minimize the scale of the problem.

Psychologist Peter Kahn calls this habituation process “environmental generational amnesia.”²⁰¹ He came up with his idea after interviewing children in the inner city of Houston. A significant number of the children interviewed understood the idea of air pollution; but they did not believe that Houston had such a problem even though

	Motivation	Ability
Structural		
Social		
Personal		

Houston was then (and still remains) one of the most polluted cities in the United States. The crux is that with each ensuing generation, the amount of environmental degradation can increase, but each generation tends to take that degraded condition as the non-degraded condition, as the normal experience.

Denial and habituation are reinforced by social proof, discussed above. If most other people don't seem concerned, why should I feel concerned? In sum, the issue lacks Importance.

Finally, even if people don't start in denial, they may feel helpless to do anything about the situation. They may feel Ready and Willing, but not Able. ("The problem is overwhelming, when I look at it I feel helpless. There's nothing I can do anyway. So I won't look at it.") On a less profound level, people can be unmotivated because they are not convinced that the specific change strategies proposed will produce the desired outcome. Ability factors (discussed in more detail below) together with denial, habituation, and social motivation mutually reinforce to undermine Importance.

To move to action people must have a sense that the issue is not only Important but also Urgent.



Is It Urgent?

One way to understand the difference between Importance and Urgency is that Importance is a thoughtful determination whereas Urgency is a visceral one. Conceptual thinking is a relatively late development in human evolution and requires a lot of energy. This is why we often rely on mental shortcuts and behavioral habits, including stereotypes, to determine our actions, rather than laboriously thinking them through.²⁰² In any event, we generally will not take action until we feel the urgency.

Global climate disruption, resource depletion, and the ballooning of human population are all problems that require a lot of thinking to understand. If people are willing to do the thinking, they may register the Importance of the issues. But given that the changes seem remote in time and location, people may not register the Urgency. We are evolutionarily programmed to respond much more powerfully to the tangible – the “here and now” – than to things that are intangible and remote. Polls show that, at least in the



United States, people don't see the climate change problem as urgent.²⁰³

We act on what is urgent because urgency grabs our emotions. Recent research on the factors that make an idea "go viral" has found that virality is driven by content that evokes high arousal emotions, whether positive or negative (e.g., awe or anger or anxiety). Content that evokes low arousal or deactivating emotions (e.g. sadness) is less likely to go viral.²⁰⁴

Recall Maslow's hierarchy (highest to most basic):

- Self-actualization
- Self-esteem
- Social Connection / Belongingness & Love
- Safety & Security
- Physiological - for air, food, water, shelter, etc.

Whether the three key behaviors are Urgent or not will depend on which need on Maslow's Hierarchy is most salient for the person in question and on how the behaviors are framed.

If, for example, the salient need is for social connection and if the three behaviors are framed as desirable social norms, then the behaviors will possess some urgency. If on the other hand the salient need is for physiological necessities and the behaviors are seen as irrelevant for acquiring the necessities, the behaviors will possess no urgency, even though they might be deemed abstractly "important". ("Yes, saving the planet is important, but my rent is due and I have a baby to feed and my mother is sick.")

Personal – Ability

	Motivation	Ability
Structural		
Social		
Personal		

Can I Take Effective Action?

If the social context is favorable, and if the issue is both important and urgent, before doing anything we consider one final question: "Can I take effective action?"

Personal ability to take effective action encompasses both internal factors such as skills, knowledge, and adequate planning and also external factors such as supportive conditions and availability of resources. It is sometimes referred to as "perceived behavioral control" and sometimes as a sense of "self-efficacy".²⁰⁵

Importance of First Step and a Path of Steps

The first requisite for Ability to act is a clear description of the first concrete steps that can be taken toward the vision.²⁰⁶ Ideally the steps should be laid out in "bite sized" pieces. If the behavioral gap between steps is very large, it can decrease motivation by diminishing confidence in one's ability.²⁰⁷ While it's hard to imagine a change that would be too *important* to make, it's easy to imagine a change that would seem too *big* to make. It's easier to jump the distance of one yard ten times than it is to jump ten yards at a single go.

Possible first steps have been offered in numerous handbooks, consumer guides, and lists of practical suggestions.²⁰⁸ The familiar reminder to "Reduce/Reuse/Recycle" attempts to



	Motivation	Ability
Structural		
Social		
Personal		

encapsulate the steps in a phrase.

Our three key behaviors can be taken as simple prescriptions for action at the personal level.

The steps listed on the next page are first steps only. Our three key behaviors also lay out the direction of subsequent steps. And at each next step a person can only do the best that she or he can do at that point. After that, assuredly, the next choice point will arise.

And these are first steps at the Personal level only. Different first steps would apply at the Social and Structural levels.

Ability Depends in Part on Structural Factors

The planetary crisis is a systemic crisis and therefore the ability of individuals to take action is highly dependent on the systemic structures within which individuals find themselves. It is well within the ability of many people in developed countries to replace an incandescent light bulb with a lower footprint CFL or LED light bulb. But it is beyond the ability of many to use lower carbon-footprint electricity unless their electric utility system changes to lower-carbon sources, and this is a structural change. Likewise, it is within the ability of many in developing countries to use lower-footprint, high efficiency biomass cook stoves, but only if the manufacturing infrastructure and supply chain is in place to provide such cook stoves at the local market.²¹¹ And the infrastructure is a structural issue. Much of Personal Ability depends on Structural Ability.



Sense of Self-Efficacy

Both the scale of the crisis and the dependency of personal ability on structure tend to undermine a sense of personal ability to contribute meaningfully to a solution. This situation has been likened to “learned helplessness”.²¹² Learned helplessness refers to the condition of a human or animal that has learned to behave helplessly, failing to respond even though there are opportunities for it to help itself by avoiding unpleasant circumstances or by gaining positive rewards.²¹³ Learned helplessness undermines self-efficacy, or one’s belief in one’s ability to succeed.

People with high self-efficacy—that is, those who believe they can perform well—are

Examples of First Steps – PERSONAL Level

Low Footprint:

- Reduce / Reuse / Repair for reuse / Recycle
- When you do purchase something, purchase items with components sustainably sourced and that can easily be remanufactured or recycled
- Use sustainable energy
- Eat lower on the food chain, organic foods where possible

High Equity:

- Learn about cultures and subcultures different from your own.
- Consider: If everyone did what I am about to do, would the world be a better place?

Prosperity Rather Than Growth:

- In local political involvement: act and vote to make growth pay its own way
- Limit the number of children you have

Maintain / Restore Ecosystems:

- Learn about your local ecosystem and its native species.
- Learn about the native cultures in your area and how they related to your environment
- Involve your children in nature so as to prevent nature deficit disorder²⁰⁹
- Contribute your time and/or money to ecosystem restoration and habitat conservation projects. Such projects exist in every region of the country.²¹⁰



	Motivation	Ability
Structural		
Social		
Personal		

more likely to view difficult tasks as something to be mastered rather than something to be avoided and are likely to have firmer commitment to their goals.²¹⁴ Self-efficacy can include both a sense of having the needed skill to carry out an action and the person’s belief that she or he can generate and maintain the effort required to carry out the necessary actions. (Conversely, low self-efficacy would imply lacking the needed skills and/or believing the behavior is difficult to integrate into one’s lifestyle).

Learning from others through positive role-modeling can support self-efficacy, as can taking simple steps that help reinforce a sense of self-efficacy. The act of recycling an aluminum can, for example, is not only a way of saving resources and ecosystems, but also a way of maintaining your “sobriety” within a culture of addictive consumption and reinforcing your self-efficacy. Taking the Personal first steps listed above, or similar steps, will increase your sense of self-efficacy to be able to take steps at the Social and Structural levels.

Stages of the Behavioral Change Process

The stages of intentional human change have been examined with a number of different behaviors and in a variety of populations in various countries around the world. Initial data support the contention that the same basic process of change occurs cross culturally and that change is indeed a process that occurs over time rather than a unique event. Change is not like an on/off switch but more like a dimmer. In general the stages of change can be described in sequence as “I haven’t thought about it”, “I’m

thinking about it”, “I’m getting ready to do it”, “I’m doing it”, and “I’m continuing to do it and am integrating it into my lifestyle” (pre-contemplation, contemplation, preparation, action, and maintenance).^{215,216,217,218,219} For our three key behaviors, the final maintenance stage should include generalizing the behaviors to all aspects of one’s life.

In individual change work the key is to meet the person at the stage they are currently in and help them move from that stage to the next. The proper question is *not* “Why isn’t this person motivated?” but rather “For what *is* this person motivated?” This approach to change meshes nicely with insights from Diffusion of Innovation studies.

We can tell the depth of a person's enlightenment by how they serve others.

- Zen master Kōbō-Daishi (774–835)

Summary

The convergence of several trends, including global climate disruption, resource depletion, and the ballooning of human population, has brought us to the point where we need to act conscientiously at all times. When faced with a choice, we must:

1. Choose the low footprint / high equity option
2. Choose prosperity rather than growth
3. Choose that which maintains and restores ecosystems

These are the behaviors that, if widely enacted, would move us in the right direction. Many of us have been using the word “sustainability” as a shorthand word to stand for what we mean by “the right direction.” Unfortunately the word “sustainability” has been distorted or overused. I think that most people in the world could agree that more explicitly “the right direction” is toward security, jobs, health, and happiness for all, ongoing.

In order to move in the right direction we can make these key behavioral choices at decision points large and small along the way. These three behaviors constitute the core ethics for making wise choices and maintaining a livable planet.

The large-scale changes that we need will really come about through changes at the Structural level. But in order for the Structural changes to take place, we need to foster Social norms that reinforce the three behaviors and provide political and economic support for changes at the Structural level. And for the social norms to flourish, we need individuals to adopt the three behaviors at the Personal level.

Personal change begins with recognizing the Importance and Urgency of the situation and in addition believing in one's Ability to take effective action. Individual behavioral changes, when supported in our social groups, can lead to changed norms. Changed norms can lead to changed social and political structures. Even taking a small step can increase your sense of self-efficacy. Even taking a small step can begin to heal the inner world as well as the outer one. Even taking a small step can make you a role model who inspires others.

Perhaps the best way to test the three key behaviors is to put them into practice. Consciously try them out and see if they don't make you happier.

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