

The Hope Graph

Things are getting better and better, and worse and worse, faster and faster.

– Tom Atlee

Congratulations! You got the job. You start work immediately. You may already be hard at work, and if so, this is your renewal notice. And here is your assignment:

JOB DESCRIPTION

World development is making most people richer and healthier. It is creating enormous new opportunities for human learning and self-expression. But it is also creating a dangerous set of conditions and trends – climate change, a stark rich/poor divide, an erosion of community and social capital, depletion of both non-renewable and renewable resources, conflict over resources, degraded ecosystems, disappearing species, and many other problems – that are increasingly likely to cause collapses and catastrophes, small and large. These growing dangers are greatly diminishing the long-term prospects of both people and nature. Our current course is not sustainable.

Your job is to help change the world, by changing the systems in which you live and work. Your objective is to prevent collapse or catastrophe – in both human and natural systems – and to increase the prospects for a more sustainable and even beautiful future.

To assist you in accomplishing your assignment, you will be given access to current research about the trends shaping that future, as well as up-to-date news about important breakthroughs, tools, technologies and change processes. You will be linked up to other individuals and groups who have accepted the same job and who are spread out across the planet. This global ‘conspiracy of hope’, combined with the latest in communications technology, will make it possible to work in both physical and virtual teams, and to find help and support, almost anywhere.

Your prospects for success are better than they might appear, because slow changes can suddenly become very rapid, and because humanity has a long history of rising to overcome great challenges. But you face a number of daunting obstacles and limitations:

- **You will be given minimal resources to pursue your mission** – indeed, an extremely tiny amount when compared to the resources currently spent to fuel your community, company or government on its current course. You will have to find ways to create large-scale changes with small-scale budgets using high-leverage intervention strategies.
- **You will be largely invisible to others**, and it will sometimes be difficult to explain to other people what you are doing. Phrases like ‘sustainable development’, ‘global transformation’ or ‘a systems perspective’ still leave most people scratching their heads. You will have to communicate your intentions in ways that speak to people’s immediate and local needs while also convincing them to participate in longer-term, larger-scale changes to solve increasingly global problems. There is not enough time to wait for people to ‘wake up’ or ‘get it’ on a mass scale.
- **You will have limited access to centres of power**. If you achieve access, you will often discover that many people sitting in those centres of power feel surprisingly trapped by the system that they are supposedly controlling, and relatively powerless to make change. If you are not able to convince them otherwise, you will have to find other ‘leverage points’, other places to start change processes that can then spread through the system.
- **Meanwhile, the momentum of change in the wrong direction will be immeasurably huge, and will probably continue to accelerate, in ways that seem unstoppable**. It is imperative that you resist tendencies to despair and cynicism, in yourself and others, and that you find effective ways to spread a sense of hope and inspiration. For without hope – the belief that change is possible, that your vision of a sustainable world is attainable – your chances of success fall dramatically.

Good luck.

If you were interested enough to open this book, then you have already identified yourself as a candidate for the ‘job’ described above. Or you could be someone who has already held such a ‘position’, perhaps for many years. Whether newcomer or veteran, I hope you are inspired by the challenges of this historic period, and by the chance to play a role in addressing them.

On the other hand, you may not want the job. You might actually *prefer* to do something else with your life. But when one becomes aware that the world is genuinely headed for big trouble, and that changing course requires tremendous efforts, by as many people as possible, it is usually impossible to pretend that one does not have this rather important piece of information.

For most people, once they begin to grasp the gravity of our situation, not caring is not an option.

Fortunately, those of us who care are not alone. For a rapidly growing number of people, the ‘job description’ above is arriving in their lives suddenly, and through many channels. Perhaps a book or documentary film has convinced them of the dangers of climate change. Perhaps a trip to another country has awakened them to the reality of global poverty, as well as to the costs of rapid economic growth. Perhaps the seriousness and urgency of the world situation, after years of being either a nagging worry or dismissible exaggeration, has simply dawned upon them in an undeniable way, especially as political leaders, magazines and other previously sceptical public voices become not just convinced, but alarmed and actively engaged.

And sometimes people like you have received this job description at their actual job, from their actual boss. Perhaps you were reassigned from a job in public relations to the job of being a person who coordinates ‘sustainability programmes’ or ‘corporate responsibility’ – and realized that you have effectively been assigned to tackle the world’s greatest problems, on behalf of your company, city or government agency.

Indeed, tackling the world’s greatest problems has now become not just a movement, but a *profession*. And this profession, because it knits together people from nearly every discipline, is generally described not in terms of what people actually do, but in terms of the goal that they are trying to achieve: *sustainability*.

The word ‘sustainability’ simply refers to the ability of *any* system to keep going over time. It has historically been applied to everything from fish and forest management to the financial analysis of companies, to military logistics and the provision of armed forces with food, fuel and ammunition. ‘Sustainable development’, meanwhile, means *change over time* in the direction of sustainability. One needs the latter to achieve the former. (More on this in Chapter 5.)

‘Unsustainable’ systems collapse, by definition, while sustainable ones can keep doing what they are doing. A bewildering portion of systems in the world today – from agriculture to zoos – are unsustainable, because they depend on fossil energy sources, dirty and nature-destroying industrial processes, and/or social arrangements that simply cannot ‘keep doing what they are doing’ without wrecking the planet and creating the preconditions for armed conflict or worse.

That’s why we need sustainable development, as well as sustainable *re*-development.

And we need a lot *more* of both. And fast.

The fact that the world is increasingly caught up in a conversation about ‘global sustainability’ – that is, the ability of the *entire world* to keep doing what it is doing – is an utterly remarkable historical occurrence. Debates about the possibility of natural, economic and/or social collapse, spurred by

catastrophic climate change and its harrowing web of interconnected global problems, have moved from the fringe cafés of pessimistic Greens to the centrepiece position on the international political table. Whether the increasingly real-looking collapse scenarios are truly ‘global’ or just huge enough to be global in their impact hardly matters. Whether the time horizon is 10 years or 50 may make a difference to economists who think in terms of future-discount rates, but it makes little difference to people worried about grandchildren and polar bears.

The fact that the global conversation about sustainability and sustainable development is increasingly becoming understood as a *global struggle* – a literal race against time, with life-and-death stakes for millions of people and other living species, both short and long term – is without a doubt the defining fact of our generation, and probably will be for several generations to come.

In the midst of this growing global clamour and chatter about our future, I take the emergence and the rapid increase in the number of ‘sustainability professionals’ – people whose jobs formally include sustainability or sustainable development issues, by whatever name – as both a troubling and a hopeful sign. It is troubling that such work is necessary, because where there is smoke there is fire. Where there is a rapidly growing fire brigade, fires are a rapidly growing problem.

But it gives me hope that the world is responding to the gathering storm of chronic problems and looming crises. People working on sustainability issues, at levels ranging from the very local to the very global, now number conservatively in the hundreds of thousands, very likely the millions, depending on how one defines the terms. The fact that every year marks the entry of many new people into this ‘global fire brigade’ is one of the most hopeful indicators I know.



During the last half-century, a growing chorus of scientists and researchers has been warning humanity that certain trends – global warming, growing population, increasing waste, a declining resource base, deteriorating natural systems – were heading us into danger, and that great efforts were required to avoid the worst. There have always been individuals, groups and organizations dedicated to raising awareness of the issues and taking practical and strategic action to make a difference. But these efforts have been small, putting it mildly, relative to the scale of the challenge. Great efforts require great numbers of people, a veritable army of people, working at all levels to create sustainability.

Finally, that army seems to be forming.

I received my own inescapable invitation to join the sustainability army in 1979, as a college student studying classic texts like *The Limits to Growth* (Meadows et al) and *Population, Resources, Environment* (Ehrlich, Ehrlich and Holdren). Since 1988, I have worked as a ‘sustainability professional’, someone whose job title has included the word ‘sustainability’ and whose job description, while not reading like the one above in any formal way, has certainly felt like that much of the time. Back in the late 1980s, we ‘professionals’ were a small and rather lonely bunch. Most of those formally engaged in sustainability work were scientists, grassroots activists, and United Nations-level policy thinkers and diplomats. (I started out as a journalist and wrote about them.) There were no ‘Vice Presidents for Sustainability’ in companies, no ‘Agenda 21 Coordinators’ for cities, no master’s degrees offered in ‘Business Administration with a Concentration in Sustainable Development’. Acronyms like ‘CSR’ had not yet been invented.

For me and for the few thousand people working globally on these issues back in the late 1980s, sustainability was a ‘field’ one learned by volunteerism, apprenticeship and learning-on-the-job. A great deal of what is now ‘standard practice’ was developed by people who just ‘made it up as they went along’. In our efforts to do something to ‘save the world’ – a phrase used with some combination of seriousness and self-deprecating irony – we were all amateurs.

These days, ‘saving the world’ is serious business, engaging major universities, large companies, and national and international agencies. But this is not a book just for the ‘pros’, or for professionals-in-training. This is also very much a book for ‘amateurs’ – remembering that the root of the word ‘amateur’ is *amare*, love. This is a book for all those who have dedicated some piece of their lives, professional or otherwise, indeed some piece of their hearts, to helping the human species make the greatest transition it has ever been challenged to make: the transition to a globally sustainable civilization.



New York City

May 1988

It's amazing what junk some people will buy. To finance a move from New York to Seattle, for the past few weeks I have been a weekly fixture at this flea market in Brooklyn. I'm selling everything I can – clothes, books, records, furniture... even my underwear. Somebody just paid me 25 cents each for a bunch of old boxer shorts.

This cross-country move was originally motivated by a desire to get out of

The City, and live somewhere with easier access to the natural world. It's hard to love nature if you can't see it. And for reasons I can't explain, I feel drawn to Seattle, with its surrounding mountains, forests and waters. Then, after announcing to friends that Seattle was my destination, someone forwarded a position announcement for a job there...and now, amazingly, I have exactly the kind of job I've been longing for. In a couple of weeks I start work as the Managing Editor of In Context magazine, a quarterly journal of 'humane sustainable culture'. The office is on Bainbridge Island, 35 minutes by ferry from Seattle. I can bike and boat to work.

The founders of this magazine, Robert and Diane Gilman, are extraordinary people. Robert abandoned his promising career as an astrophysicist with NASA because he became familiar with the data here on planet Earth. He realized that 'the stars could wait, but the planet couldn't'. Together, Robert and Diane built a solar house, grew their own food and started this magazine, as they struggled both to demonstrate what 'sustainability' might look like at the small scale and to spread the word about how to act locally while thinking globally. Ironically, the attempt made them ill: the untreated cedar boards in the house gave off fumes, the work was too intense, and now they find themselves living in a Seattle suburb, recovering and trying to grow this tiny magazine.

The burning desire to 'do something' that came over me in college, combined with my hard-to-summarize background – interdisciplinary training in philosophy and science and economics and the arts and whatever else I could get away with, plus social work experience, plus running a clothing company in New York, plus running a small international exchange organization for the last year – finally seems a little less crazy than it once did, since my eclecticism is what got me the job. Perhaps even my Aunt Mary, so worried that I have been somehow 'wasting my potential' by not going to medical school, will see it that way too. I did not think there would ever be a 'profession' or 'career track' for someone like me, someone who wants to try to help prevent global catastrophe. Apparently now there is one.

I think that's the best part about getting this job: learning that I'm not alone with this crazy sense that the world's on the wrong track, and that it's going to take a lot of effort by a lot of people to change that track. In Context magazine has 2000 subscribers now. That's not a big number, but it means there are at least 2000 other people who find sustainability, systems thinking and cultural change processes interesting enough to subscribe to.

I wonder how quickly we can grow that number.



By the time I left *In Context* in 1992, our circulation had grown to nearly 15,000. The Gilmans retired the US-based journal in 1996, but the magazine's editorial team created another one called *Yes! A Journal of Positive Futures*, and it now has many times that many subscribers. More to the point, *Yes!* is just one in a long list of magazines, academic journals, email newsletters and indeed entire publishing houses that service the fast-growing core of the global 'sustainability movement', in all its colours and flavours – not counting the near-daily articles in more 'mainstream' publications. It is no exaggeration to say that the number of people working for sustainability, for money or love or both, has exploded in recent years. From business to education to community planning, even in seemingly unlikely places such as departments of defence or space agencies, you will find people for whom sustainability is not just their job, but their profession – and, indeed, their passion.

I know, because many such people have been my clients. Since 1992, I have worked as a strategic consultant in sustainability, building up a global practice and a network of associates and partners. Our clients have most often been the 'sustainability change agents' within other organizations, people for whom the job description that opens this book is a daily reality. In fact, all 'sustainability professionals' are 'change agents' by definition: they wake up every morning and go to work wondering how to change their city, their company, their neighbourhood, their multi-nation region of the world, in ways that will reduce the emission of greenhouse gases, increase opportunities for those who have too little, or lead to a new economic system that does not require the destruction of nature or the sacrifice of people in order to generate value. They all face the obstacles described above, and many more besides. And yet they press on, and find ways to make positive change, often brilliantly.

How do they do it? As with all professions, there is no one right way to 'do' sustainability. Methods abound. The core of this book presents one such method, and introduces a set of tools that my colleagues and I have used with some success over the years. The tools have been collected together into a suite called 'Accelerator' and are intended to provide support to every stage in the sustainable development process.

But it is important to emphasize, from the outset, that tools and methods are not in themselves particularly important. *Sustainability outcomes* are important. Either a species gets saved or it doesn't; either a company gets radically more efficient in its use of energy and resources or it doesn't; either a poor village experiences an improvement in sanitation, health and quality of life, powered by a renewable energy source, or it doesn't. It scarcely matters what specific set of methods, frameworks, policy goals or registered-trademark tools are used, so long as they work and help move the world forward towards its dreams and away from its nightmares.

I do believe, however, that all the world's most effective methods for

advancing sustainability share a set of characteristics, and that the best ones support people through a process of learning, thinking and doing that most often follows a certain sequence. The methods in this book are also built on that sequence. What follows is a ‘first draft’ for a ‘theory of sustainable development’ – a description of how the process happens – that can be applied to many different tools and processes.



What does it take to ‘do sustainable development’?

Of course, many people successfully do sustainable development without any need for a theory. Still, I believe that successful sustainable development involves doing all of the following, and usually in a recurring sequence, whether consciously or not. Some parts of the following process are hardly new; people and organizations engage in change processes all the time, and the art and science of managing change are highly developed. But achieving sustainability requires that we marry these processes to a much broader understanding and a much greater commitment to the wellbeing of the whole world around us.

To ‘do’ sustainability . . .

First, one must understand the general concept of a ‘system’

A system is a collection of elements that are linked together in a web of cause-and-effect relationships. Our world is made up of countless systems, some created by natural processes, some created by human beings. And while each ‘system’ partly stands alone, it is also true that each system is affected by other systems. That makes *systems thinking*, the ability to see and understand key linkages and cause–effect relationships, a prerequisite for doing sustainable development effectively.

Systems thinking is not ‘modern’ or ‘technical’, nor does it require advanced professional training. Systems thinking is a fundamental human skill. Virtually anybody can understand that a city, a forest, a company or a person is a system which is in turn made up internally of smaller systems and linked in turn to many other systems outside of itself. And if one stops to think about it, and has good information, one can usually build a good working mental model of any system and its key elements and linkages.

Doing sustainability requires, first and foremost, that we stop and think. While systems thinking is a universal human skill, it is also a skill that people have either more or less of – and one needs more of it to do sustainable development work effectively. One also needs a very broad perspective that

embraces, increasingly, all of planet Earth as the ultimate system with which we must concern ourselves. Thinking is critical, and systems thinking is worth spending time and energy to get better at.

Second, one must know what ‘sustainability’ means

In general terms, let’s define sustainability as *the ability of a system to continue working (and evolving) over the long term*. Whether that system is a forest, a national economy, a school system or one’s own body, there exists a set of *conditions and boundaries* that define whether or not the system will be able to keep going, or whether it is likely to suffer some kind of collapse. Doing sustainable development requires that we understand what those conditions and boundaries are, so that we can help a system to function optimally within them.

These days, there are many popular and useful formulations of the conditions required to maintain the sustainability of a system. Variants have emerged from science, economics and business management circles. Some are short, simple statements consisting of a few principles; others are scientifically comprehensive and even mathematically defined formulas. In my work, I use the simple technical definition given above, a flexible strategic framework called the ‘ISIS Compass’ (see Chapter 7) and the comprehensive global consensus on ethical principles known as the Earth Charter (see Appendix 2). These provide me with the reference points I need to know what I’m doing when I’m ‘doing sustainable development’.

But while it is important to have a good working definition and points of reference, such general formulations can only be used as guides: each system’s conditions for sustainability are unique (see the fourth and fifth points below).

Third, one must be able to distinguish between ‘development’ and ‘growth’

‘Development’ means *change* over time; ‘growth’ means *expansion* over time. These concepts are often used interchangeably, but they are not identical. Lack of clarity about this distinction creates confusion in sustainable development initiatives, as well as serious problems in the world generally.

Strictly speaking, *growth is a kind of development*. Development can also involve reductions, as well as qualitative changes that involve neither growth nor reduction.

Often, *something has to grow* for a system to be sustainable. New sources of energy must increase, new technologies must spread, new policies must multiply and replace the old, like a benign virus. But often, for sustainability to be possible, *something has to stop growing, or even to shrink*. Sometimes growth – in material consumption, in the spread of dangerous technologies, in the abyss between rich and poor – is what makes a system inherently *unsustainable*. There is no hope for global sustainability, for example, if there is an unending rise in

global carbon dioxide emissions, or even just a stabilization at today's levels. Our propensity to emit carbon must decline – even as our needs for energy increase.

Doing sustainable development requires *absolutely* an understanding of this critical distinction between growth and development, and applying that understanding effectively.

Fourth, you must have adequate information about what is currently happening in the system you are attempting to make more sustainable – you must understand the critical trends

Many of the problems we are now trying to solve – ranging from climate change to shortages of fresh water in rural villages – are partly the result of having very limited information about the systems we were working with. So when it comes to doing sustainable development, the more you know about the specific systems you are operating in, the better.

What are the key internal elements, structures and processes that make that system 'work'? What are the most important links between that system and the rest of the world around it? What is the current status of all those pieces of the overall puzzle? And what are the trends – the changes over time, and the speed of those changes – that can give us a clue about where the whole system is headed? Gathering comprehensive information of this kind is fundamental to doing sustainable development.

Fifth, you must understand how that specific system works

It is not enough to understand systems generally, or even to have detailed information about the status of a certain system. You must be able to use that information to understand specific, and critical, *cause-and-effect relationships*. Certain trends determine a system's fate – why are those trends happening? What trends are linked together, and how? What's causing what? And where are the 'vicious circles' and 'virtuous circles' in the system, feedback loops that link several factors together and drive change (often faster and faster) in bad or good directions?

When one knows the answers to these questions, it becomes possible to know *where* in the system one needs to intervene and make changes.

Sixth, you must identify the specific changes – innovations and other interventions – that will improve the system's development pathway and put it (or keep it) on a sustainable course

Once you understand *how* the system works, you will know *where* to change it . . . and then you can begin working on *what* to change.

Vague or general ideas are not enough; ultimately you must choose a specific action, or set of actions, to take. The word 'innovation' is used very broadly here to mean any kind of change introduced to a system, regardless of whether it is actually a 'new thing'. The kinds of changes introduced can

include new goals, policies, projects, technologies or attitudes, even new ‘mindsets’ or ‘paradigms’ – though the last two are by far the most challenging. Choice of innovation must usually be made based on a combination of criteria, including expected systemic impacts (positive and negative), chances of success and capacity to sustain the change itself over the longer term – these are the basics of a ‘good idea’.

Seventh, you must know how to successfully introduce and fully implement those changes within the system

Making change also involves another layer of systems thinking and analysis, as one moves from understanding *how the system works* to learning *how to change it*. This involves understanding the people, the organizations, and the physical and technical processes involved. Knowing where important decisions are made is critical. So is being able to identify which elements of the system (human or technical) are more open to change, where resistance to change is most likely to occur, where the points of greatest influence or ‘leverage’ are, and more besides.

If you cannot navigate within the system successfully *as it is currently structured*, you have little chance of changing it.

Eighth, you must successfully implement

Making actual change requires strategy, resources, commitment, support, relevant skills, and the capacity to adapt your plans and strategies to unforeseen circumstances. For in the process of trying to change a system, you will undoubtedly learn new things about it. Continuous learning and adaptation is a critical element of successful implementation. Obstacles are a given, so persistence and patience are absolute prerequisites.

There is no system change without actual work – often a great deal of work over an extended period of time.

Ninth, and finally, you must continuously monitor results – and continuously improve your information, systems understanding, specific change initiatives and capacity to implement change

In doing sustainability work, one must routinely go back to the fourth step and start again. Sustainable development is a never-ending process, because *development* is a never-ending process. The laws of nature see to it that nothing ever stays the same; everything changes over time. The questions, from a sustainability perspective, are always this: Where are we currently headed? Why? What must we adjust, change, invent and so forth to ensure that we will be going in a good direction over the long term? How do we implement that change?

And how do we know whether we are succeeding?



Brooklyn, New York

Spring, 1986

Riding the 'F Train' into the city. Morning commute. Reading Marquez's One Hundred Years of Solitude on my way to the law firm where I currently work to pay my struggling-songwriter rent. I look down the subway car, and I do a double-take.

There is an Asian-looking guy, halfway down the car, who looks incredibly familiar. And he keeps glancing at me as though he's thinking exactly the same thing about me.

In fact, he looks exactly like Fred.

Fred was the co-director of a treatment centre for heroin addicts in Ipoh, Malaysia, where I spent my first year after college, working as a therapist. I was there under the auspices of the prestigious Henry Luce Scholars Program. But the prestige had little chance to go to my head. My experience in Malaysia was a year-long exercise in humility.

There is no way that Fred-from-Ipoh – tall, square shoulders, wispy moustache – could be on the same New York subway train as me. But this guy keeps looking at me. I keep looking at him. 'Are you...?' And it is.

Fred is in New York on some kind of exchange programme, along with my other old boss, Aloysius. We all meet for dinner. We are so amazed at the coincidence that it takes a couple of beers to get us really talking. Especially since we did not exactly part company on good terms.

Let's just say that I was disastrous as a therapist to Malaysian junkies. I was twenty-two, clean as a whistle, a hippy-nerd-social worker. My 'patients' were average-age thirty, criminals and even killers, so street-wise they could run rings around me without breaking a sweat.

But no one could fire me. I was too 'prestigious'. So I kept demoting myself, until I finally found a suitable job, at a level I could handle: organizational consultant.

The treatment centre had an amazing donated library of books on psychology, group dynamics and organizational behaviour. I read them all, translated their key messages into simple Malaysian English and trained the staff. At the end of my scholarship internship, they asked me to perform an 'organizational assessment'. I cracked the books to learn some methodology, interviewed folks, compiled the data, analysed the organization as a system, wrote a report. My conclusion did not make me popular with the centre directors, Fred and Aloysius. Since we were operating in a confrontational therapy environment, it came out rather bluntly: 'You're the problem,' I told them, 'and you'll have to restructure.'

'Well, it's good timing that you are scheduled to go home to the US next week,' they said. 'You can pack up early. Goodbye.'

I went home knowing the taste of something I'd almost never tasted before

in my 'most-likely-to-succeed' life: failure. Multiple counts. The taste was bitter, but, as the years went by, I figured it was good for me. Character building.

Now I had the unexpected chance to eat humble pie and make my apologies in person, five years later. 'So,' I began, 'about that organizational assessment I did at the end of my year...'

'Oh, we implemented nearly all your recommendations,' says Fred. 'They worked, too.' Hub? said my amazed face. 'Yeah,' says Aloysius, 'we just had to wait for you to go home, so that we could present the ideas as our own.'

'You know, it's our culture – which I don't guess you ever really understood,' says Fred. 'We had to save face.'

What an interesting combination of 'tastes' now. Failure-success, success-failure... bittersweet.



This Malaysian episode was my first professional experience in consulting and systems change, and among many other lessons it taught me that ultimately, when we are trying to make change in a system – whether in organizations, in communities, in whole countries or in our world – *we can never be 100 per cent sure about the impact of our work.* Have we succeeded or failed? Done good or created future unforeseen problems? We do our best, but ultimately we have to live with uncertainty.

So I do not pretend that the nine-step theoretical model above is a guaranteed road map to success. But I do claim that it is a kind of archetypal road map, one that virtually everyone who does sustainability work is following, or at least *should* follow. Not because, to paraphrase the crazy philosopher from the old Monty Python comedy sketch, 'It's my theory, all mine, I made it up!' Rather, the process itself 'just is' and has this shape naturally. This is what I mean by archetypal: the theory above describes characteristics shared by all sustainable development processes, no matter how different they look on the surface.

Of course, most sustainable development initiatives in the world today have not followed the nine-step sequence above in any formal sense. But nearly all initiatives *do* follow it – even if they may not have thought it through for themselves, or followed these steps in sequence, or conceptualized the process this way. This is because *you cannot effectively and reliably practise sustainable development any other way.* Without a whole-systems understanding, clarity on the meaning of key concepts (and a commitment to the vision they represent), knowledge of current trends, some kind of specific systems analysis, some relevant change to introduce, and a strategy for introducing it ... well, something

else might be happening as a result of your activities, but very likely not sustainable development.

Finally, the purpose of describing a ‘theory’ like this is not to declare how people *must* do sustainable development. It is to make clear what the ideas, assumptions and beliefs are behind the process we are all engaged in – a process that underlies virtually every conceptual model, toolset and methodology you will come across. Understanding this underlying, archetypal process will help you in understanding the role specific models or tools are meant to play; and it will help you adapt them to your needs.

If you do not agree, try this thought experiment: consider the sustainability initiatives with which you are familiar. You will find them to be embedded in the above process, often as a combination of several steps together. Here are a few examples:

- **A company’s CSR or sustainability reporting programme:** Such programmes correspond to Step 4, understanding the critical trends within a system. Reporting happens after a certain level of understanding of sustainability and its challenges has been reached. The best reports go a step further and describe underlying dynamics behind their indicators, and how they link together (Step 5). Often they report on initiatives, *innovations*, that they are introducing into their systems in order to have an impact on those trends and move them towards sustainability (Step 6). Note that *reporting* is also part of Step 9, evaluating the success of your work in whole-system impact terms.
- **A city programme introducing alternative fuel vehicles to its fleet:** This corresponds to Steps 6, 7 and 8 – identifying a specific sustainability innovation to introduce, planning its introduction and implementing. In its most common form, such an initiative has been the outcome of a process that started with the organization coming to understand sustainability (usually in terms of the local and global problems that are *unsustainable*), taking stock of its transport situation, and identifying alternative vehicles as a feasible and meaningful change in the system.
- **A school or workplace programme of sustainability education and awareness raising:** These often cover Steps 1 to 4, and walk people through an introduction to general concepts of long-term system health, trends threatening that health as well as systems thinking itself. Usually they include examples of innovations that are being introduced, without explaining too much about how those changes have been planned and implemented. And all too often such programmes skip over a real confrontation with the difference between ‘growth’ and ‘development’ – but the issues are there implicitly in any case. You cannot confront the issue of climate change, for example, without also confronting the growth

of carbon dioxide emissions and the imperative to develop different energy solutions.

You do not have to accept this theory, of course – but it helps to understand it in order to get value from this book, since the tools and methods described later on rest on it. And, of course, you are encouraged to reflect critically on this theory, and challenge it. That thinking will also help you make your work more effective – and if you share your thoughts, it can improve other people's work (including mine) as well.

But while good theories and strategies are essential elements to doing sustainable development, they are not enough. There is also a 'Step 0' in the theory presented above, which is this:

First, you have to care.



Stockholm, Sweden

19 December 2007

I am sitting on a bus, heading home from work, and marvelling at what seems to be a rising tide of destructive behaviour in my neighbourhood. Someone – surely a bunch of boys – has blown up one of the newspaper dispensers at the main suburban transfer station, which doubles as the local shopping centre. Blowing things up with New Year's fireworks, or even shooting firework-rockets at people, is the latest trend among the more alienated young men in Sweden's urban centres.

It's petty stuff in the global scheme of things, but it nonetheless reminds me of far worse acts of organized, mostly male violence happening in other parts of the world. It brings up worries about the trends, about where we're headed.

Ahead of me sit three boys who could theoretically be the culprits. They are 14 or 15, talking loudly, punching each other on the shoulder, and generally disturbing the peace. Fearless in my own small way, I've got my computer out, and I try to ignore them as I write.

'Hey you!' one of them says to me after a while, adopting a provocative stance. 'What kind of computer is that?' Uh-oh. I tell him the model, and start preparing mental strategies for turning his attention away from me. 'You're running that thing on a battery, right?' 'Yes, I am,' I answer, and bite back the insulting word 'obviously'. 'Okay – where did the energy to run that battery come from?' he asks.

Hub. Not what I was expecting. 'Well, we buy green electricity, so technically it's all wind power in there.'

'Okay, that's good,' he says. 'We're interested in the environment,' he tells me, softening just a little. 'Climate change is a real problem, you know?' 'Yes,' I tell him. 'I do know. I'm glad that you know it too. It's a problem I work on pretty much every day.' 'Really? That's cool – see ya!' he says as I pack up to get off at my stop.

And I think to myself, some things are getting better, even while other things are getting worse at the same time.



Every day, in my daily life as well as in the global press, I see evidence that awareness is spreading. More and more people seem engaged, at a personal level, with the challenges facing humanity in the 21st century. In recent years, that awareness has reached into more and more unlikely corners, from the 'war rooms' of big political campaigns to the schoolrooms of tiny towns, from the development plans for small businesses to the operations plans for big military bases. More importantly, increasing numbers of people are showing a *willingness to care*, which translates into an active engagement, and then to action . . . and even to the commitment of some portion of one's life's work.

Caring is the first step. Caring is not just a feeling: it is a move towards commitment, born out of values and ethical principles. We care about a problem because we believe it to be both real and important. We act to solve a problem when we believe we must. When we truly care about something, we overcome any Hamlet-like hesitation, or any selfish desire to avoid our responsibilities. The word 'duty' begins to feel less like a burden, and more like a calling.

The challenges of sustainability – especially human-caused global warming, globally declining natural systems, and the entrenched global poverty and injustice that is both a contributing cause and increasingly a result of these environmental problems – have become a universal human duty. Awareness of these issues is now hard to avoid; ignoring them is no longer ethically defensible. We *must* do sustainable development as though our lives depended on it – because increasingly, many people's lives do.



The world's race against time is not a linear process. Most of the trends we are up against are *exponential* – that is, they are growing worse at an accelerating rate. A scientific group called the International Geosphere-Biosphere

Programme (loosely translated, ‘The Group that Tries to Understand the Whole Planet as a System’) has assembled a set of trend graphs that show the rocketing pace of these changes – changes that were slow-to-invisible not so long ago, but which can now be observed by anybody who regularly visits a glacier, a patch of rainforest or a fishing ground. Figure 1.1 gives one version of the picture.

These are the numbers behind the Tom Atlee quote that opens this chapter: ‘Things are getting better and better, and worse and worse, faster and faster.’ The growth in paper consumption, for example, is tied to more people reading as well as to more forests being levelled. The rise of international tourism and the adoption of telephones mean that humanity is becoming well travelled and well connected in ways that were impossible to imagine just a century ago – but this is happening at the cost of carbon emissions, heavy metal accumulation in the environment and the questionable value of finding the same fast-food restaurants everywhere we travel.

For many, these are not just worrying indicators; they are ‘despair graphs’. These explosive trends, all classic examples of exponential growth, reflect a world changing not only faster than we understand, but changing at speeds and in ways we *cannot* understand. At first glance, it seems impossible to do anything to arrest, stabilize or even just change these trends, even (or perhaps especially) those that are most obviously damaging to our future prospects. A feeling of depression is a not an uncommon reaction to this picture.

But oddly, there is also hope in this picture. For if the world can be transformed in troubling or dangerous ways, at speeds that beggar belief, it can also change in *positive* ways, and at similarly incredible speeds. Do you remember the Berlin Wall? Apartheid? Or to dial the clock back some years, the British Empire’s rule in India? Hardly anyone, living at the time when these artefacts of history were a reality, would have been able to predict with confidence how quickly they would be overturned and replaced by new and highly democratic systems.

This is the reality of *transformation*.



East Berlin, Germany

September 1992

I am sitting with my friend Michael LaFond in a spinning restaurant far above Berlin Alexanderplatz, drinking a late night beer. The city is laid out under us, like a glittering carpet. Michael, a sustainability architect, is a friend from Seattle,

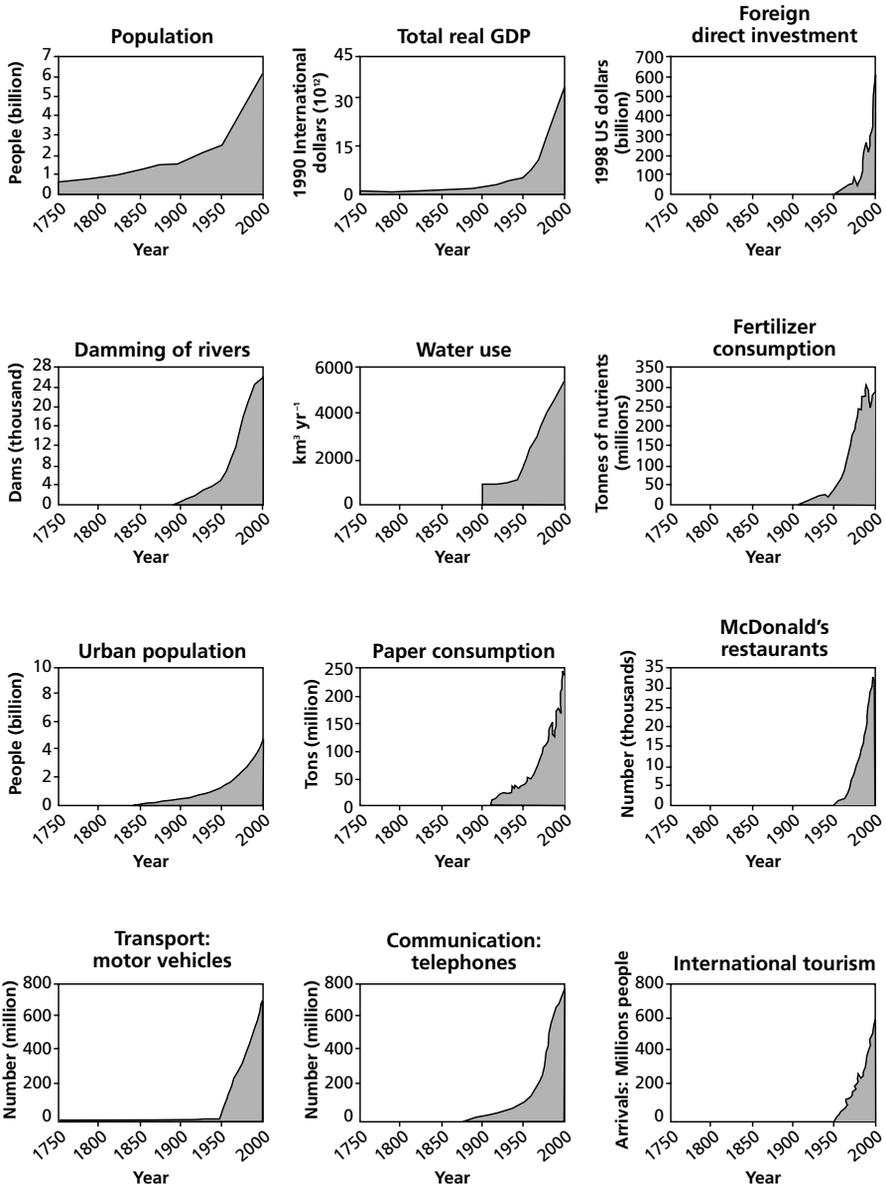


Figure 1.1 *Exponentially worsening trends*

Source: W. Steffen, A. Sanderson, P. D. Tyson, J. Jäger, P. A. Matson, B. Moore III, F. Oldfield, K. Richardson, H. J. Schellnhuber, B. L. Turner and R. J. Wasson (2004) *Global Change and the Earth System: A Planet Under Pressure*, Springer-Verlag, Berlin, Heidelberg and New York, used with permission

here on postgraduate studies; I am on my first-ever speaking tour in Europe. We share a certain perspective on the world: dangerous trends, dark omens, creative possibilities, even the hope of transformation.

Here in Berlin, transformation is in full swing.

Earlier we watched a sort of weekly parade that happens here in the eastern half of a newly unified Berlin, which has been colonized by artists and real estate developers. A group of neo-tribals were dragging old war detritus through the streets, drumming and chanting – including an old MIG fighter jet and a tank. These get banged on, with mallets. Around us, lit up by the torches and street-lights, some structures were crumbling, some things were shiny new. The effect was surreal, to say the least.

In my pocket, I have the obligatory ‘piece of the Berlin Wall’, picked up during a ramble earlier in the day. Just a piece of grey concrete. But the fact that I could simply pick up a piece of ‘the Wall’ as though it were any old piece of scrap – no guards, no barbed wire, no ‘communism’ – is amazing to me. Raised in America in the 1960s and 1970s, I had the ingrained belief that the Iron Curtain was an unchangeable feature of the European landscape.

‘There’s an electricity in the air here,’ Michael says to me, ‘a feeling that anything is possible. Lots of experimentation. There’s a kind of buzz you pick up, just from walking down the street.’ Here for just a few days, I feel it too: the electric buzz of hope.



For several years, in giving presentations all around the world, I used another set of graphs as a counter-argument to the despair some people reported when they began to grasp the power of exponential growth in things like urban sprawl and carbon dioxide emissions. I displayed data on the falling price of wind and solar energy, the growth of hybrid and other alternative vehicles, or even the number of sustainability consultants and professionals worldwide. Each graph had the same message: *exponential growth works both ways*.

Over time, I began to synthesize all this information into the following, symbolic representation of what we are living through. I call it the ‘Hope Graph’.

This picture summarizes the task before us: to *speed up* the process of implementing the sustainable replacements for our unsustainable way of life. The spot on the graph marked ‘Transformation Point’ – the symbolic point where sustainable choices have overtaken the unsustainable and become the predominant way of doing things on planet Earth – is not a mathematical function: it is the result of billions of human decisions. It is the cumulative result of

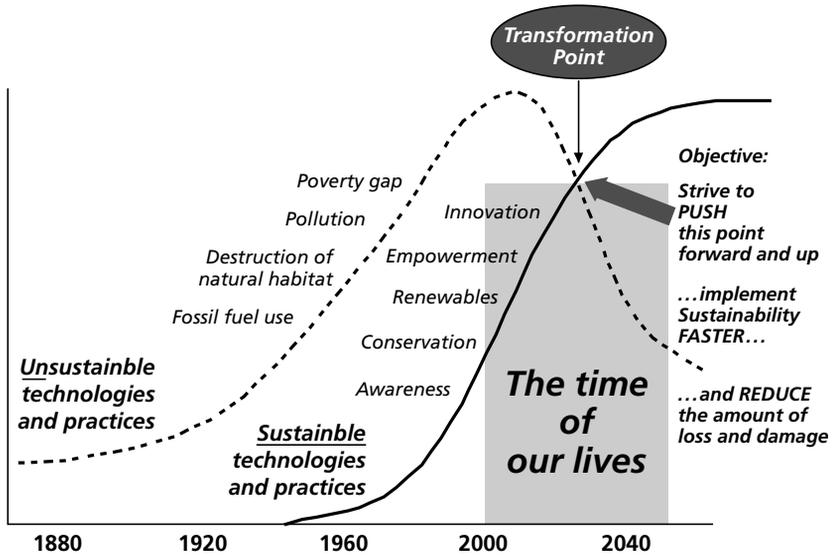


Figure 1.2 *The Hope Graph*

our decisions, the choices we make during ‘the time of our lives’. This means that the Transformation Point is not a fixed point in time; the faster we choose sustainability, the sooner it happens.

And the longer we wait, the more we lose.

Note that some of the problems we face are already hitting the ‘peak before drop’ stage in their growth curves. ‘Peak oil’, for example, is no longer just an academic field of study, but a matter of urgent policy discussion: how do we replace a resource whose reserves are limited, and whose price is destined to rise dramatically? And many polluting processes – such as some of the air pollutants in the world’s cities – have already reached their peak, been replaced by alternatives and fallen back. But other processes, such as greenhouse gas emissions generally, are still experiencing the rush of meteoric rise.

Meanwhile, however, windmills and solar roofs are also sprouting around the world, millions of people in poorer countries are participating in micro-credit schemes, and companies are getting more and more serious about turning ‘CSR’ from PR into standard operating procedure. So the good news is that this is a transformation that is already under way: unsustainable processes must end by definition, and in many cases they are already being overtaken by a growing suite of innovations in technology, business practice, government policy, community planning and individual lifestyle choice.

The bad news comes in the form of a challenge: *How fast can we make these beneficial changes happen?* Because sustainability, while accelerating, is still lagging behind the growth curves of the problems it is trying to solve. And every single day of delay has a stark cost. Sometimes the losses are incremental, such as the disappearance of a panda, or a Bangladeshi family succumbing to the stress of trying to eke out a living against the odds. But sometimes these costs are huge, and sudden: a climate change-driven storm surge overwhelms a city's flood protection and evacuation plan; a whole species finds that it has no suitable habitat left to migrate to.

We have no idea, in most cases, where these hidden triggers and 'tipping points', as they are increasingly referred to, lie – on which specific day is the action deadline to avoid the loss of a species, a catastrophic flooding event, the unnecessary death of a child. If we are serious, if 'caring' is to mean anything, we have no ethical choice but to do our best to make the sustainability transformation happen faster... and faster and faster.

The real basis for hope lies in our willingness to take on this challenge – this responsibility – as one of the central guiding principles in our lives.



Cannon Beach, Oregon

September 1992

Preparing for my first international speaking trip, I go down to the beach to practise. It's a dark night. The waves are roaring. Perfect. No one can see me, or hear me. I pretend the ocean is my audience, and I begin to orate.

After a short while, my words start to become embarrassing, even to my lonesome self. I sound so preachy! I did once consider the priesthood as a career. Right now, I might as well be giving the world's worst sermon.

So I begin to speak about my discomfort, to the waves. They are exceedingly patient. They listen, without complaint, to my gentle whining: Why should I be giving these speeches? I'm just some guy! Who is going to listen to me, issuing warnings about the future, and making calls to action? I probably would not listen to me either!

But something happens, a subtle shift, and I start to listen. The wind and the waves... they tell me something.

Every puff of wind is part of 'the wind'; every ripple is essential to creating 'the waves'.

It's an old lesson, but I'm finally starting to get it. Every bucket is full of 'drops in the bucket'. None of us is special; all of us are essential.

For the first time in weeks, I no longer feel nervous about these upcoming speeches and presentations. I head back to the hotel, and a deep, restful sleep.



When Jon Stewart, the American television comedian, was chosen to host the Oscars, he retorted, ‘Even I’m disappointed.’

Quoting the Groucho Marx ‘resignation joke’, Woody Allen famously complained to the camera, in the film *Annie Hall*, that ‘I would never want to belong to any club that would have someone like me as a member.’

Even US President Abraham Lincoln, writing about his early love life, confessed that ‘I can never be satisfied with anyone who would be block-head enough to have me.’

All of the foregoing is the introduction to a thought that began to occur to me in the early 1990s, as I found myself increasingly invited to lead workshops, give speeches and provide ‘expert advice’ of various kinds: ‘If *I’m* considered an expert, then the world is truly in desperate trouble.’

A feeling of inadequacy is both a normal and common response for all who find themselves tasked – formally or informally, by the actions of a boss or by the bossy demands of their conscience – with trying to move their corner of the globe towards sustainable development.

But the fact of the matter is this: when it comes to ‘saving the world’ – or, to be much more precise, when it comes to transforming our systems so that they contribute to sustainable outcomes for nature and humanity, rather than collapse scenarios – *we* are all we’ve got.

Shortly after completing my first book, *Believing Cassandra*, I was trying to come to grips with this bewildering state of affairs, this all-important interplay between global trends and human capacities. I was in London to celebrate the Millennium, the turning of the Western calendar from 1999 to 2000, when inspiration struck, and I sat down to write my own ‘manifesto’. The document was intended more as a letter to myself, ‘an exercise in personal clarification’, as I called it. I was trying to stiffen my own backbone to take on the challenge and the calling I had just issued, in book form, to the rest of the world. I showed this ‘manifesto’, which is now an essay with the title ‘Sustainability is dead – Long live sustainability’, to a few close friends, who encouraged me to publish it. (The entire essay, which has since appeared in a several places and versions, is appended to this book as Appendix 1.)

Harkening back to the early days of the sustainability movement, I had produced my little manifesto in a friend’s borrowed room in East London, feeling a bit like a lonely pioneer-author. But this was quite a naive perspective. For

unbeknown to me, another, somewhat similar, but much more auspicious document was being completed at almost exactly the same time, as a global collaboration involving thousands of authors in dozens of countries.

Overseen by an independent, high-level commission, initiated by Maurice Strong (former Secretary-General of the Earth Summit in 1992, among many other distinctions) and Mikhail Gorbachev (former President of the Soviet Union and the architect of the world-changing policies of *perestroika* and *glasnost*), the document had been through hundreds of drafting sessions and consultation meetings around the world, worked over by leaders and scholars and scientists of all kinds. It represented the best possible consensus statement of our global situation, humanity's ethical responsibilities in the face of that situation and the prospects of hope for transformative change. Called the 'Earth Charter', the document had finally been completed at UNESCO headquarters in Paris just a few months after the millennium new year celebrations of 2000, and it was formally released with pomp and ceremony in The Netherlands that June. I have also included the entire text of the Earth Charter as an appendix to this book (Appendix 2). (I learned about the Earth Charter by first consulting to its Steering Committee, and then acting as the administration's Executive Director for two years – more on that later.)

For those for whom the struggle to maintain hope is a real one, and for whom the feeling of being called to a duty greater than one's capacities still feels like a burden, I make the following recommendations: read the Earth Charter, as a common, global reference point, a statement that has touched and united people of all faiths and backgrounds. Then write your own manifesto, your own statement of what you believe to be the case in these times, what you stand for, what you are working for in your life. I guarantee that you will find the exercise enormously clarifying – and very likely enormously inspiring as well.

For sustaining our own sense of purpose and inspiration, our willingness to dedicate time and resources to solving the great global challenges before us, is perhaps the highest 'sustainable development' priority of all.