

futurish

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THINKING OUT LOUD ABOUT FUTURES

Foreword, in all directions

Intermezzo: Black elephant selfie

Uncertainty and (un)prediction

Intermezzo: Must, might, Macht

The creature present

FOREWORD, IN ALL DIRECTIONS

There are always reasons why someone writes and distributes a book. The "why" of this book can be answered in at least as many voices as those that have contributed to writing it. The earlier process of compacting the Data Ecologies 2012 symposium into book form through a book sprint showed us that this process of writing was not a bad thing. So undertaking a similar sprint to document the Data Ecologies 2014 symposium seemed like a good idea. The subtitle was "Tools and Language to think out loud about futures", so we invited a range of practitioners to share their thoughts, efforts and expertise on the topic of how futures thinking and everyday life intersect. The Book Sprint methodology, described as a "self-documenting conference", seemed like an appropriate way to gather the participants' excitement around thinking out loud about futures.

Here we are: a mixture of playful experts and expert players, professional practitioners, applied theorists, tangent-generating generalists and guerrilla randomness-reducers, trapped in a creepy, Twin Peak villa deep in the southern parts of Upper Austria trying extensively to summarise, to tangentially collect, to harvest and weave the outcomes of the Data Ecologies Symposium 2014 into the book in front of you. Working alone and in groups, the voices multiplied and interwove to create a multifaceted choir of voices that have

playfully, productively, consciously and communally (mis)interpreted one another and have joyfully left space for precisely these (mis)interpretations.

This storm of voices may occasionally unsettle, but should not detract from the seriousness of the attempt to think out loud as exactly as possible. The boundaries of prediction are as significant as the limits of knowledge about the present; as we argue and discuss, it is only the playful exploration of these ideas as much as the playful exploration of futures ideas that holds any hope for some kind of understanding.

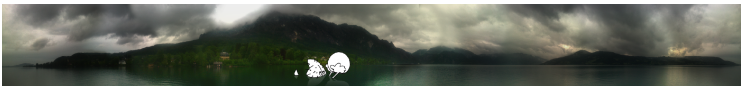
In this sense, the content of this book offers a fragmented spectrum of tools, practices, approaches and thinking styles for the imagining, integration and internalisation of (im)plausible, (un)likely and (im)possible variations and variants of futures multiplicities and their (un)certainities that expand in all imaginable dimensions of time and space.

The urgency of attempting to write a book about the future in just four days is likely to make us forget the issues that are difficult to put into words. Open-ended questions, cultural blind spots, implicit assumptions, unsolidified magma of collaborative thought processes, suspicions and reservations tend to fall off the pages of linear books, accustomed as we are to reading them from an opening statement to a clear conclusion (especially nonfiction books like this one). The strong pull of the strange attractor known as "the imposing deadline" encourages a reductionist approach to any subject mat-

ter, which is precisely what we are trying to avoid: when faced with a short-term emergency, we tend to narrow our focus to what we know and (think we) understand. Fight or flight or freeze.

The more existential questions, or the ones that cannot easily be answered by the people in the room, often get left behind. Even though we're not likely to be able to answer such questions in the timeframe of a book sprint, they should still have a home in this book. Hence you will find a series of small, open-ended and inconclusive fragments, where a few chinks and inconsistencies in our concepts and thoughts appear. Though contradictory and esoteric, they may at least serve as a set of jaundiced lenses through which, for amusement or distraction, other parts of this book could be read.

What we don't want to present is, in Scott Smith's phrase, yet another "flat-pack future", appearing seamless and confident on the surface but full of gaps and confusions within. We admit up front that we don't have an answer to all of the questions posed in this book, but that doesn't mean we don't have anything to say. We hope that our questioning of everything, including ourselves, will keep this material fresh, open, and inviting for further conversations.



FOREWORD, IN ALL DIRECTIONS

INTERMEZZO: BLACK ELEPHANT SELFIE

"Now we're cooking with metonymic pachyderms!" @justinpickard

Returning from an evening walk in the company of yaks, the dining room was entirely empty and silent. Not a single voice anywhere broke the stillness that crystallised between the empty glasses, the discarded napkins, serviettes and plates, the painting of Jesus, the depleted bottle of "Little Hitler" and the eternal plastic flowers. The whole chateau was as if deserted. The open fire had burned down to a velvet murmur; the room, brilliantly illuminated behind windows whose reflections almost entirely concealed and fractured the slate grey rock, mist and water, was more cosy and intimate than a forgotten *boudoir*, lost in time, detached from the eighteenth century, stranded like stardust detritus here in the cheap, forgettable backwaters of the twenty-first. Evidence of dolls: like dominoes, we fall united. You and yours, and you, they were the only screams and laughter that brought it all together and made it real. A chin{k|tz} of light, a half-closed door: you invited me to descend the labyrinth, a chequered chessboard minefield I had to step through on the way to the Schuhräum, the globular attractor at the bottom of every spiral staircase.

INTERMEZZO: BLACK ELEPHANT SELFIE

UNCERTAINTY AND (UN)PREDICTION

When we hear the words "futures studies" and "foresight" in conversation, spontaneous associations might arise. We might think of fortunetelling, predictions, secret knowledge inaccessible to ordinary mortals, or perhaps arcane ways to translate uncertainties of the present into certainties in the future. Forecasting is talked about as a neutral, technocratic, depoliticised, top-down, expert-driven practice. Futurists are often ascribed with the skill to collapse the ever expanding cone of unknown possibilities into a few probable outcomes. But what happens when we view foresights in a wider context, as (in the words of Justin Pickard at Data Ecologies 2014) "something to be understood as a social undertaking, and only one point in a much wider field of strategies and tactics for dealing with the future"?

If accurate prediction of the future is the primary value of foresight, then the entire field of inquiry should certainly be dismissed. What happens when a predicted future does not come to pass? Look at the trail of unfulfilled promises: jet-packs and space-elevators or nuclear-powered hover houses in a pill. Researchers in science and technology innovation are well aware of the disappointment and apathy that false predictions can cause. In fact, there are so many studies in expectation science looking at what to do with our responses to predic-

tions about the future that the (sub)field even has a name: the "sociology of expectations" (Borup et al., 2006). As Justin Pickard and Maja Kuzmanovic cautioned in their talks at Data Ecologies, once spoken or otherwise presented in public, images of the future tend to escape the confines of innocent speculation and can run amok as self-fulfilling prophecies or misinterpreted social knowledge. Words have power, as we discuss in the chapter on the politics of futures in this book.

None of this is particularly new. There has been much work around speech act theory or action research that can illuminate the use of words and actions to create change. In the words of Jose Ramos, "action research can offer futures studies a way of testing the applicability and validity of foresight within local contexts. In relation to local stakeholders, 'knowledge about the future' shouldn't be an overly abstract concept lacking relevance, but rather an inspirational call to action with traction" (Ramos, 2002). What if we view predictions not as providing answers about the future, but questions about how we could improve our present condition - as ways to illuminate our assumptions, and to uncover a range of possible responses to real challenges?

A prediction, any prediction, can help isolate particular forces which have a knowable impact on the situation we're faced with. For example, we can predict that there will be a win, loss or draw in a football match. Based on this prediction a group of fans can decide to prepare themselves for all outcomes with enough beer to either celebrate or drown their sorrows. They'll be fine either way. However, a more spe-

cific prediction that their team will win by two goals, with bets placed on the prediction, will involve a real chance of losing.

In *Antifragile* (2012) Taleb advocates "A Nonpredictive View of the World" (not to mention "The Importance of Lunch"). This is a particular approach to uncertainty where one can benefit from a situation even if predictions are wrong, misleading, or irrelevant. For example, he talks about airline safety in general being improved with each specific accident. Based on the assumption that there will be aircraft crashes in the future, when an aircraft does crash, the information from that crash can be used to improve the safety of other aircraft. With a more predictive worldview, the same situation would more likely have a different outcome: an airline makes a data-driven prediction that forecasts that they will suffer one crash in a given period. If the crash doesn't happen, the airline may lower the probability of crashes in their fleet and loosen safety measures to cut costs; the next week they might have two crashes.

The lesson to be learned from this example is not to rely on the outcome of a prediction as a way to determine action, but to use it as a way of obtaining information about the world, or to gain insight into what Donna Haraway calls "situated knowledge" (Haraway, 1998). On the other hand, there are some situations where forecasting with certainty is an absolute requirement. An air traffic controller operates in an environment in which understanding the future position of multiple aircraft with certainty is of critical importance. Any degree of uncertainty in knowing this well defined future is unacceptable.

How to use prediction wisely

The most calamitous failures of prediction usually have a lot in common. We focus on those signals that tell a story about the world as we would like it to be, not how it really is. We ignore the risks that are hardest to measure, even when they pose the greatest threats to our well-being. We make approximations and assumptions about the world that are much cruder than we realize. We abhor uncertainty, even when it is an irreducible part of the problem we are trying to solve.

Nate Silver, *The Signal and the Noise* (2012)

The question remains, what are the situations where it makes sense to use predictions? How do we differentiate between the unknowable and the predictable (within practical limits)? Making predictions about things that aren't measurable (like "Where do I find true love?") doesn't make much sense, but it is surprising how often organisations willingly base important decisions on predicting the unpredictable. We would argue that the only predictions that it makes sense to *even attempt* should be about things to which we can attach probability, things that can be measured and known at a specific point in the future. Thus, in a process of prediction, coming up with the right question is key. If it is a question whose answer has a decisive and measurable outcome, then prediction might be useful. If not, it would be better to look for other ways to improve the situation, or simply to inhabit uncertainty (as described elsewhere in this book).

In general a useful prediction involves dynamic modelling, data analysis, and human judgement (Silver, 2012). How specific the modelling, how accurate any resulting data might be, and whether predictions can be constructed as a series of conditions informing the next are all important to know from a statistical perspective. There are other questions worth asking before investing significant resources in predictions, such as: What is at stake? What might be the consequences of different outcomes? Is there a way to establish conditions where any outcome will be of benefit? Which things are not being modelled? Even once these questions have been answered, it can still be misleading to use a prediction as a fact on which decisions can be built. In many examples in this book, including experiential futures, physical narratives, transmedia storytelling, or future pre-enactments, predictions are used as a set of observations, providing additional information about a current theory which needs prototyping in real situations (or "real-life labs") to be worthwhile.

When is the illusion of predictability a trap? The rise of "Big Data" has fuelled the assumption that collecting more data will enable better predictions and more seamlessly reveal our true desires and intentions, which is in turn based on the assumption of a knowable universe (i.e. the predictability fallacy). While some things that are computable and may be reasonably predictable within a limited domain and time horizon (tomorrow's weather, online purchasing patterns, the position of air traffic, etc.), substantial aspects of human experience fall outside this narrow domain. The dilemma that "not everything that counts can be counted, and not everything that can be counted counts" (Cameron, 1963) reminds us that many important

things in life cannot be measured and therefore fall outside of the scope of data-driven forecasting. Not only is there a danger that unquantifiable data will be ignored, but also that the filtering of data into meaning becomes extremely error prone. The more data that becomes available for analysis, the higher the probability becomes of seeing false positives, hallucinations of patterns caused by noise, randomness and the inevitable wisdom of infinite monkeys. Where should we inject noise and randomness to improve our perception of the signal?

When it comes to using data-driven systems to generate new wisdom, we need to reconsider desirable output not as formulas for how to act in the universe, but rather as the cultivation of a disposition towards thinking about *futures* in plural - in a way that embraces uncertainty.

Many parts of this book describe the motivations, tools and situations that give rise to these dispositions. While we can use data, algorithms and human judgement to derive a range of predictions about the future, the extent to which we can rely on them without context, situated knowledge or experience is extremely limited. The ability to separate things that can be easily (or usefully) predicted to provide "actionable intelligence" from those that are too messy, complex or unknowable becomes part of this disposition. Are there heuristics that can help with this untangling? At the end of this book we have collated a non-exhaustive set of principles that might provide some answers.

Between the unknowable and predictable lies the shadow. Knowing when to predict and when to stay silent; remaining open to the possibilities of uncertainty. In light of the different approaches to uncertainty and prediction discussed above, what if we described foresight not as providing a better understanding of "the future" but being able to develop a propensity to encounter and inhabit any contingency or any possible future? How can the field of futures help open up conceptual spaces between the "is" and the "otherwise", the inevitable and the unthinkable?

This opening up, this shift in perspective, can help us both individually and as communities. It can help us take up the tools we need to deal with contemporary challenges and potentials. As Justin Pickard suggests, let's look at how, in a time of societal turboparalysis and looming climate disaster, we could best use our energies to advance the field.

UNCERTAINTY AND (UN)PREDICTION

INTERMEZZO: MUST, MIGHT, MACHT

What lies at the collision of history and the millennium, data and desire, centripetal and cen-



trifugal? These forms and deformations inform the shape and shadow of uncertainty. With no future we have no uncertainty. Without free will we have no fate. "Must" vs "might" vs "macht" fuel the will to disempower. Science and interpretation. Cultural constructions and constrictions of time. The assumption that we make assumptions. The rhetoric of Aristotle vs Atman. Can we understand foresight as an accepted divination practice for a predominantly rational, instrumental and materialist culture? If so, what other histories of divination are we forgetting to take into account?

INTERMEZZO: MUST, MIGHT, MACHT

THE CREATURE PRESENT

Human beings live in the midst of a swirling ecology of matter, information, and potential that persists across the sentient and elemental realms of the world; deeply embedded in a web of life and entangled in a multiplicity of histories. We are the products of a three-billion-year process of emergence, a ten-million-year process of tool-making and design, and thousands of years of storytelling. At present we are actively designing and re-designing many of the systems that surround us. Our skyscrapers displace forests and watersheds, our automobiles and centres of industry produce quantities of atmospheric pollution that threaten to destabilise our planet's climate, while on the forefront of science and technology we embark on the design of life itself.

This capability for human engineering on so many fronts brings with it immense risk, opportunity, and responsibility that can't be assessed from within a single discipline or worldview. Our present situation calls for a multiplicity of human skills and knowledge domains to be connected and integrated in transdisciplinary approaches to exploring and understanding the complexity of life. As our uniquely human appetite for design begins to permeate the living and physical systems upon which we depend, it is amazing to stop and notice that we have set in place no transcultural systems or patterns for engag-

ing ourselves in the design of possible, plausible, or preferred visions of the future we all share.

Unlike other animals, merrily living their lives away in what futurist Richard Slaughter calls



the "creature present" - a period of a single lifespan - humans have material and immaterial techniques to extend their memories across wide temporal and spatial planes. We have drawn and re-drawn our beginnings deeper and deeper into the past. But, while we have come to understand our narratives as inclusive of evolution on the African savannah, the dawn of agriculture, globalisation, and the early exploration of our solar system; our expansion of the present into the past hasn't been balanced by deeper projections and explorations into an unknown future.

Our investments in thinking, acting, and designing towards a diversity of aspirational futures for ourselves and our species are few and far between. In other words, most of us have a well-developed sense of hindsight. We have a somewhat underused capability for insight and observation, but the structured capacity for foresight has historically been the domain of an arcane minority of oracles, fortunetellers and most recently, people known as futurists, or strategic foresight consultants.

While keeping foresight shrouded in mystery worked well in top-down societies with predominantly local challenges, one of the key contentions in this book is that humanity has reached a critical

point where a collective, accessible "foresight literacy" is becoming increasingly necessary to tackle the complex web of uncertainties we face today and in any foreseeable futures. If we agree with Slaughter in viewing foresight as an emergent capacity of the human mind, then the barrier to democratisation of future thinking becomes not biological but cultural and political. Can we become the self-determining entities we like to believe ourselves to be, or are we locked into a "creature present" more than we know?

Between utopia and dystopia

Science fiction storytelling aside, we have no widely utilised process for creatively engaging both specialists and mass audiences with the design, prototyping, narrativisation, and testing of short, medium, or long-term futures. Our stories about the future tend towards the dramatic and extreme - transformative abundance or catastrophic scarcity and collapse. There is little nuance to the images and scenarios we invoke about the future of our species. We overlook the grey area between utopia and dystopia - the myriad scenarios that involve the mundane day-to-day existence of the diverse cultures on this planet. The opportunities we do take to design prototypes of social, technological, economic, and environmental futures call on an increasingly esoteric range of specialists and experts, ignoring the opinions and insights of the vast majority of the population - exactly the same situation we were in thousands of years ago.

We see ourselves as embedded in a pervasive present moment, where a seemingly endless diversity of designed products and services are at our disposal and often disposable themselves. We fantasise about illuminating new insights in the caverns of deep history that demonstrate how extinct civilisations acquired beta versions of skills for sustainably manipulating their goods, food supplies, and cultural environs. But when it comes to applying the creative streak that we marvel at in our forebears to the world of next week, next year, or the next decade, we just don't seem to have the time. Meanwhile, the time it takes for a radical design innovation to become the "new normal", be it a steel manufacturing process or the interface on an iPhone, is accelerating as we apply our latest technological innovations to the design of each new iteration, and to the maintenance of existing technologies.

Our capacity to account for this acceleration into an uncertain future, balancing it with a longer lead-time on the thinking and dreaming we do about the goals of our species, is seemingly atrophied. By the time we arrive in a world where biological design and geo-engineering are commonplace in a decade or a century, will we have any meaningful capacity for thinking creatively and disruptively about alternative futures? Will we have any ability to think beyond the tantalising innovations obviously hurtling towards us through pipelines of research, scientific innovation, and social transformation?

The ability to anticipate and assess potential existential threats - emerging on the African savannah and cultivated over millions of years - is no longer something we can relegate to the expression of

genes custom-evolved for such a purpose, or to a special caste of experts and consultants, as we have increasingly been doing for the past fifty years. In a world where human beings design everything from complex products and social services to self-replicating organisms and self-designing systems, it is high time that we began to imagine new ways to encourage all human beings to apply their creative intelligence to the massively multiplayer design of the future.

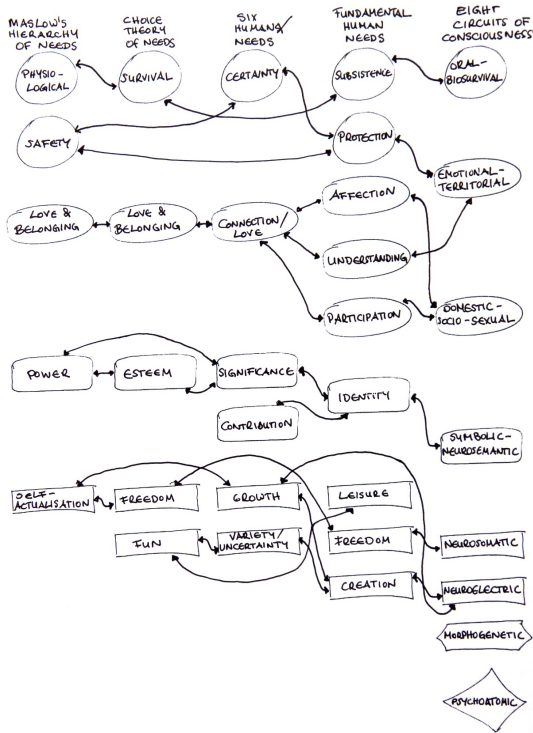
Models of engagement

Grasping our place in the vastness of time and space may involve a realisation of our mortality and fragility, which in turn give us a drive to continuously learn how to be and act in the world and adapt to changing conditions. We learn about ourselves and what we might be capable of through the direct experiences that make up our lives, and through more abstracted forms of knowledge acquisition. Historically, in order to create a sense that we are in control of our own lives and the world around us, we humans have devised oversimplified and static models of how the world works, including our place within it. These mental models have taken the form of religious belief systems, psychological frameworks, as well as scientific modes of reasoning.

At a "higher order" level, several such models of fundamental human needs that emerged during the twentieth century have a common focus on playful or creative activity. Maslow's hierarchy of needs (Maslow, 1943) peaks with the state of "self-actualisation", an em-

pathic intuition of what really matters when we have fulfilled all our other needs. Heading the choice theory of needs we find freedom and fun. The Leary-Wilson eight circuits of consciousness (Wilson, 1983), leaning heavily on core Buddhist and Hindu concepts, suggests that the next major paradigm shift for our species involves a redesign of our whole culture towards a state where we view ourselves as deeply intertwined with all beings and the universe.

THINKING OUT LOUD ABOUT FUTURES



Mapping different hierarchies of needs

Emerging as they have within domain-specific, highly specialised and hotly contested fields, the challenge we face as individuals and as a

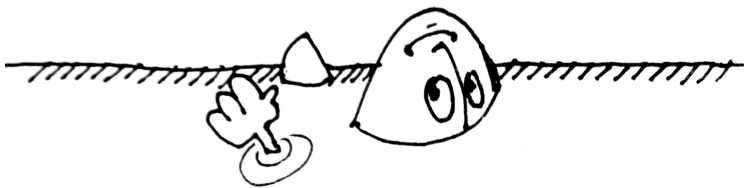
species is to avoid mistaking the map for the territory and remain aware that they are representations devised in different social, economic, and environmental contexts. Models, methods and frameworks can help bring structure to our lives, but are inevitably the product of a culture. We could be using them as raw materials for the construction of individual and communal subjectivities and as sparks for our designs.

By approaching models as relative and malleable, we can cultivate approaches to the world that are inherently plural. Just as the future cannot be seen as a singular objective inevitability, and no single medium can claim to be uniquely effective in enabling communications between humans and larger systems, no single model of human needs and desires - and by corollary no single model of self or the world - can be taken as objective truth.

Our human tendency to simplify the world and to lock in assumptions about our drives within it provides a false sense of certainty and objectivity that, ironically, makes us more vulnerable and less resilient in a world currently (and perhaps always) defined by dynamic change and disruption. Our current task at this moment of technological advances, cultural crises, and environmental degradation, could be to combine and evolve the pieces of each model in personal, perhaps mundane ways - to synthesise and bricolage views of our selves in the world in a way that integrates the intertwined drives we often seem to share for play, irreverence, and rationality.

By peeling back the pretense of objectivity and continually questioning our assumptions we can open up an imaginative space for alternative visions of the future of individuals, communities, and even our whole species to emerge. As children "what if" games come naturally, imagining new ways of living occurs on a daily basis. Perhaps by creating time and place as adults to imagine what futures might be like is a crucial task for all of us, regardless of age, race or gender. If we continue to explore how to cultivate a diversity of approaches to learning and knowledge transfer, are we not likely to become more inclusive, creative and transdisciplinary?

We argue that learning should encompass concrete learning and academic abstraction as well as experiential learning as well as iterative instruction. Creative and imaginative approaches to thinking about the futures, and the active exploration of these ideas across complex, co-created, and cross-media narratives could help us develop a cultural and personal design capacity for self-actualisation in an age of unpredictable change, echoing the presumed fundamental needs that top many models of our drives in the world. We could develop a futures literacy that has critical thought and a playful creative engagement built in at many levels.



THE CREATURE PRESENT

EVERYDAY FUTURES

Don't overcook it

The practice of everyday futures

Inhabiting uncertainty

Intermezzo: Fear and desire

THE CREATURE PRESENT

DON'T OVERCOOK IT

For the past century or so, robots – particularly domestic ones – have played a central role in our future dreams, as servants, entertainers, pets (such as Sony's AIBO from 1999), and even humanoid companions. The question as to whether or not we actually need or want robots to help us in our daily lives has always seemed somehow beside the point. Yet here we are in the 21st century and very few of us actually have robots in our homes, perhaps because they seem so uncanny, so *creepy*. Robots, in this sense, represent the failure of the utopian versus the everyday, as well as an entry point for an interrogation of grand visions of the future. In his 1943 essay *Can Socialists Be Happy?*, George Orwell describes "goody goody" utopias like William Morris's *News From Nowhere* (1891) as unconvincing failures because they are detached from the realities of everyday life.

Orwell reminds us that *utopia* means "a non-existent place", not "a good place". Moreover, utopian thinking can be dangerous: the "perfect" worlds described in the early novels of H. G. Wells, as Orwell points out in another essay from the same period, eventually came to describe the nightmarish techno-futurism of Nazi Germany. Perhaps when we think about possible futures we should realize that the Future (which is constantly coming to pass, providing an infinite supply of case studies) is much more like the present than we sometimes imagine.

Rather than accept the equally improbable dichotomous extremes of utopia or dystopia, we would do better to search for futures that bear closer resemblance to our everyday life. Instead of shiny, perfect futures in which we are all safe and healthy, enjoying the fruits of technological abundance, or bleak, apocalyptic wastelands in which we barely struggle to survive, we should picture the familiar daily grind, subtly altered to accommodate incremental shifts in tools and thinking. It is less productive to imagine the near future as Mount Everest—grand, monolithic, and impossible or improbable for most of us to reach—than to imagine it as a gentle hike through a familiar if not completely known landscape: a forest trail we walked one summer years before that has now shifted into autumn. What makes Orwell's dystopian novel *1984* so effective is not its extreme depiction of a disastrous future so much as its rootedness in the grim everyday of post-war Britain: daily miseries such as the scarcity of foodstuffs under rationing, for example, or the equally minor pleasures of getting hold of contraband sugar, tobacco, or coffee.

Similar to the disconnect between the extremes of utopia and dystopia and the reality of our daily life, the trouble with conventional, professional futures forecasting is that it is often too data heavy, too dry and abstract, making it difficult to connect to our personal contexts and lived experience. For example, even a document as important as the 2014 report on climate change published by the IPCC (Intergovernmental Panel for Climate Change), a document that is actually highly connected to our personal lives, fails to engage the majority of readers because the data-heavy format of its paper-

based presentation, relying on complex charts and diagrams, remains very distant.

As an alternative to professional, data-driven futures forecasting, there has arisen a very different approach: an attempt to bridge the gap between the futures we imagine and the actual lives we lead. The goal with this relatively new approach of "everyday futures" is to discover what Julian Bleecker of the Near Future Laboratory has called the "normal everyday ordinary future": micro-level futurism as it relates to our daily existence. At the same time, it would be unproductive to attempt to artificially "close" gaps if it means limiting possibilities or curtailing productive conversations.

For that reason we might try instead to "mind the gap" – to become aware of tensions between utopian and dystopian extremes, or the kinds of grand futures we are able to imagine and the more mundane futures that keep arriving in our everyday present. Perhaps most importantly, everyday futures help us to realize our own agency: that all of us can, and must, play a role in shaping our future.



Why everyday futures?

Design seeks out ways to jump over its own conceptual walls - scenarios, user observation, brainstorming, rapid prototyping, critical design, speculative design.

Bruce Sterling, *Interactions Magazine* (May/June 2009)

Scott Smith, founder of Changeist and a speaker at Data Ecologies 2014, has described the practice of everyday futures as "unshocking" the future. This means coming at the future from a pragmatic, mundane perspective, for example in terms of expectations about technologies. Whereas corporate visions of the future – "flat-pack futures" – tend to erase all traces of the old world and create a highly polished, optimized world that is fully immersed in technology, "unshocked" futures depict the future as it usually comes to pass, with small incremental shifts in our daily lives.

What exercises in "unshocking" the futures do is to bring potential futures down to a level that is tangible, relatable, and living. It helps to show people how The Future is also our future, how our possible futures are closer than we may think, and how they will be more familiar – uncannily so – than unfamiliar. The gap between the everyday present and the imagined future becomes in this sense less intimidating; we realize that the present we know today will most likely still be recognizable for decades to come. The future is tomorrow's everyday present.

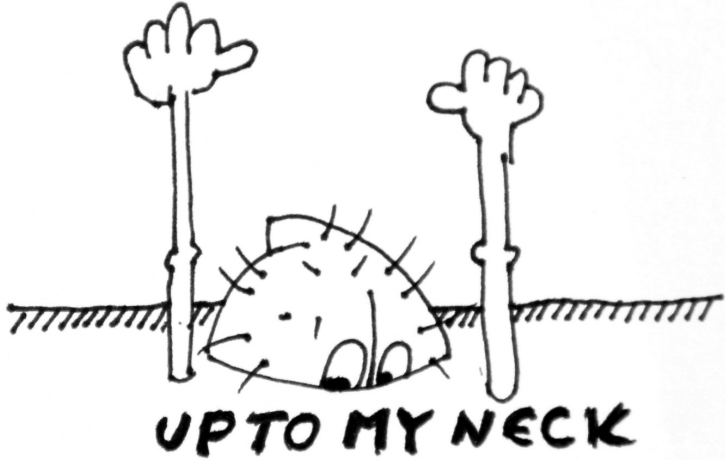
As speculated futures becomes less grand, less polished and less overcooked, they also begin to appear more changeable; they are brought within our grasp. We suddenly feel we have a stake in our own futures. In *Walden* (1854), Henry David Thoreau reminds us that today as every day "the sun rose clear". We have agency in the path our life will take, and the path we are travelling on is not, in the majority of cases, the only path. "There are as many ways as there can be drawn radii from one centre", he wrote. So it is with possible futures: there is not one but many possible futures, and by bringing the future down to earth, so to speak, making it tangible and comprehensible, we are able to see ourselves in it and to take an active part in its formation. The future comes to life; we see it as something that is created day by day, just as the reality of history is brought to life when we read stories of ordinary lives caught up in the epic turmoil of wars or revolutions.

What difference does this make? Through imagining everyday possible futures it becomes clear that we have to change something in the here and now. How will we tend to our private or community vegetable garden differently after a decade that sees an average temperature increase of 2.5 degrees? Or how will our daily shopping experiences be affected when cheap shipping costs have vanished and our food, fuel, and consumer goods rise significantly in price? Thinking in this way helps us to internalize our possible futures and to realize our agency and responsibility toward the future. Abstract data and information becomes knowledge (and eventually wisdom) only through direct experience.

DON'T OVERCOOK IT

<http://www.sony-aibo.co.uk>

<http://changeist.com>



THE PRACTICE OF EVERYDAY FUTURES

What would you do at this very moment if there was an electricity cut? Would you panic about the ice cream defrosting in the freezer, or your unsaved documents, or would you take the opportunity to make a candle-lit snack for your whole family? If you weren't at home, how would you get home if there was a countrywide blackout? Would you decide to camp out on the street and create an impromptu picnic, or reverse engineer all forms of battery-like devices and power your street using a Frankensteinish fuel cell? How would you communicate with your loved ones far away? This is the kind of simple thought exercise that can be used to start a hike into the terrain of speculative design, engaging the subject on a more personal level than more heroic approaches that remain entirely in the abstract. It is an exercise on the level of the everyday, dealing with a realistic situation that anyone can relate to: in other words, it is designed for the average user.

In his blog essay *The Future Mundane*, Nick Foster writes:

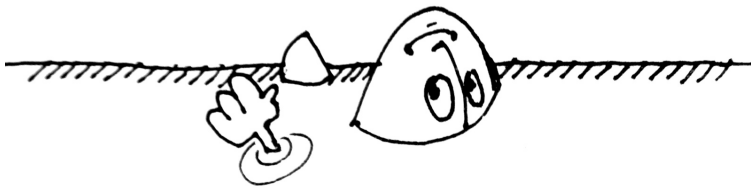
When designing for the future, designers regularly design for the hero, a trickle-down aspirational superuser intended to give us all something to hope for. But perhaps we could, for once, de-

sign for those innumerable, un-named characters of Hollywood, the extras or "background talent".

Building on this argument in *Data Ecologies 2014*, Scott Smith provided a series of how-to steps to help designers design for "unnamed characters" or "everyday-life experts". The steps were:

- Examine complex systems
- Explore subtleties rather than extremities
- Provide an experiential on-ramp for the non-professional
- Rely less on overt polemic, more on extrapolation
- Seek out entrenchment and recursion as well as advancement
- Calibrate uncanniness
- Guide the audience toward a future

To illustrate some of these principles, he presented *Winning Formula*, a project launched in March 2014 in collaboration with Near Future Laboratory and other participants of the FutureEverything festival, an annual music and arts festival held in Manchester. The project, based in the National Football Museum, included a mock newspaper set four years into the future (in April 2018) that was inserted into 130,000 copies of the *Manchester Evening News* and distributed around the city.



Where to find everyday futures?

Scott Smith distinguishes between three categories of future scenario: the *probable*, which is closest to our everyday present; the *plausible*, in the conceptual middle distance; and the *possible*, on the outer fringes. Near Future Laboratory, as its name suggests, tends to focus on the probable. One example is Julian Bleecker and Nick Foster's *Corner Convenience* (2012), a design fiction workshop that began as a newspaper and evolved into a short film. In the film experience the team imagined the future as manifested in the sorts of widely available products you might find in your local convenience store: a rack of cheap reading glasses, for example, that are pornography-enabled with Google Glass capabilities.

A similar example is the *To Be Designed* catalogue (2014), which came out of a multidisciplinary meeting of thinkers, makers and near future speculators in Detroit in 2013. Based on the classic *Sears Wish Book* or the glossy SkyMall magazines we know from the backs of airplane seats, which offer a vast range of nonessential lifestyle products, the TBD designers developed a "near future product catalogue": a range of products that might be available in a possible near future, such as brain-altering chemicals to make your children smarter.

The aim with projects like these is to connect and engage with individuals and communities on a level that makes it clear the future is everyone's concern, that after all it is all of us who will be living in it. By presenting speculative or possible futures in the form of playful

environments, artefacts, offered services, and objects of the "future mundane" – futures that differ from the present by only tiny increments or layer-by-layer accretions – we lower the threshold for inviting people to enter and envision these worlds.

In the last decade the future mundane has been a growing focus of many creative practitioners in Europe, Asia and North America. Although the practices are diverse in motivation, form and content, all of them focus on prototyping and experiencing possible futures today. They, in a way, inhabit the gap. Interestingly, many of these people emerged from the arts, design, ethnography, community development, technology and gaming, rather than futures and foresight. As with any emerging field there is still much vagueness in terminology, a slippery territory with many terms that are uncertain or unclear even to the practitioners themselves. Design fiction, experiential futures, speculative design, action foresight, critical design, alternate reality games, what-if thinking, infrastructure fiction, guerilla futures and future pre-enactments are but a few names that might help when searching for examples of works pointing towards everyday futures.

The recent book *Speculative Everything* (2013), compiled by critical designers Anthony Dunne and Fiona Raby, is an attempt to provide an overview of the design fiction and critical design segments of this growing field. However as with any hard-copy anthologies of an evolving practice, many interesting initiatives fell through the gaps of terminology and marketing. In the same way, it is beyond the scope of this book to provide an exhaustive review of everyday futures prac-

tices, so we chose to mention a few projects that have inspired the writers of this book or in which we have been involved ourselves. (Examples of guerrilla futures, design fiction, experiential futures, physical narratives, and ARN/ARGs are discussed in Chapter 5.1.)

When we speak about design fiction in the context of everyday futures, a few key examples are:

- Indian/UK studio Superflux, which creates evocative design prototypes and participatory creative sessions "at the intersection of emerging technologies and everyday life to design for a world in flux"
- Paul Graham Raven's *Infrastructure Fiction*, which encourages us to "think about the box", that is, about all the layers of technological infrastructure and its influence on daily life
- Tobias Revell's thought-provoking works such as *The Monopoly of Legitimate Use*, which questions the use and abuse of physical and technological territories
- Dutch designer Arne Hendriks' data-backed humour in his project *The Incredible Shrinking Man*, where he speculates on how much more likely humanity's survival might be if humans would shrink to be about fifty centimetres tall.

Another related area of futures practice is "experiential futures", a term coined and introduced by Stuart Candy in his work *The Futures of Everyday Life* (2010). With experiential futures Candy describes a range of formats complementary to conventional methods of foresight. Some of the projects he has been involved with, such as *Four Futures for Hawaii 2050* (2006), address relevant site- and culture-specific issues that engage the audience to focus playfully on political,

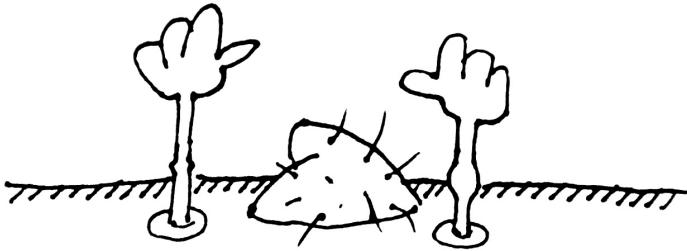
environmental, economic and other speculated changes Hawaii might encounter during the coming decades, all on a tangible, relatable day-to-day level.

More recently The Mission Business, a Toronto-based futures consultancy began designing experiences to bring futures to life for audiences who want to explore and interact with them. Their interest is to allow stories to be encountered as experiences in online and physical environments. From building storyworlds to spreading the stories across different media, they want to engage audiences and participants as creators and curators, rather than just clients. At Data Ecologies 2014 Trevor Haldenby, one of the core members of The Mission Business, talked about the project *ZED.TO: ByoLogyc*. A more detailed description of this project can be found in the chapter on case studies.

Working between the UK and China, designer and ethnographer Lisa Ma creates speculative movements, such as Bioluddites and Invasivores, to make futures "emotionally digestible". Her studios are the places where futures might happen, where she instigates social events as platforms of engagement. For example, she worked with creative labs Timelab and FoAM in Belgium to imagine how interactions between humans and invasive species might evolve. Through a series of events, workshops and expeditions, the local population of Ghent got enmeshed in a story where invasive plants and animals were seen as a source rather than a threat. Several small businesses - from a jam producer to a restaurant and even the hunters' association - were involved in the conversations and are now working with the local authorities to change policies to allow picking invasive knot-

weed and culling the plague of Canadian geese, in order to serve them as local delicacies.

Aside from working with Lisa Ma on her speculative movements, FoAM began to work with futures several years ago, from the perspective of resilience and anti-fragility. They work with individuals, small groups and communities to create future pre-enactments or prehearsals, where the participants themselves create a range of future scenarios and translate them into immersive experiences. Their work integrates processes from foresight, design research, process facilitation, disaster drills, meditation and theatre improvisation in order to allow people to experience what it might be like to live for an hour, a day, or longer in different possible futures. One of the threads in their work is the future of food, where they convert scenarios into experimental dinners, perhaps growing a new branch of everyday futures: edible foresight.



Occupy the futures

The examples mentioned above only scratch the surface of a vast number of projects and works in progress that point to different ways to entangle futures with daily life. What they all have in common is a desire to make futures tools and tactics accessible for people without a formal education in the related fields. Some of them take a "guerilla futures" approach of in-your-face action, others are more subtly infiltrating the fabric of the everyday, changing behaviours and mindsets gradually and almost imperceptibly. Stuart Candy called the the former approach 'future shock therapy, the latter ambient foresight.

While ambient foresight could be described as a slow, quiet river that over time carves its space in the present, its explicit, disruptive opposite works for impact now. Ambient foresight is wallpaper: subtle, implicit, enabling, and incidental. Future shock therapy or guerilla futures, as it might be called, is fireworks. Both approaches are valuable in different ways; both adjust how we experience time, though they employ different temporal strategies. What both approaches have in common is that they encourage us to think out loud about what the future might bring. They are also about lightening the obscure techniques and tools of forecasting to allow us not just to think out loud, but to think on our feet, moving from strategic foresight to tactical foresight.

As FoAM mentioned at Data Ecologies 2014, experiential futures can aspire to the qualities of lightness, quickness, exactitude, visibility,

multiplicity and consistency (from Italo Calvino's *Six Memos for the Next Millennium*; see the section on heuristics further on in this book). Experiential futures attempt to bring tomorrow as close to today, or in the words of Miguel Cunha, practice "real time foresight" that builds on the well established art of improvisation, originating in the field of theatre and performance.

The British dramatist Keith Johnstone wrote about Bertold Brecht's method in training actors to think on their feet (Johnstone 1981). He stated that "we should agree to discuss nothing that could be acted out". Similarly in experiential futures, we want to move as quickly as possible from words and abstract concepts to direct action or enactment, which can give us a broader understanding of our reactions to a range of possible futures - on intellectual, conversation and somatic levels. Improvisation is about approaching every problem on the basis of common sense and trying to find the most obvious possible solutions.

In a way improvisation could be seen as the polar opposite of foresight, which often focuses on planning and strategy to deal with uncertainty and attempt to control the future. Improvisation relies on spontaneity and synchronicity to resolve uncertainty on the spot. In fact, Johnstone warns that we "mustn't try to control the future or to win"; instead, he says, we need to empty our head and improve our skills of observation. "Observe and interact" is not only an important principle in improvisation, but also the first rule of permaculture: a widespread ecological design system that moves away from control and towards collaboration with the environment. Perhaps learning

how to improvise and live with uncertainty in our daily life is the answer to the question at the end of the previous chapter, about how we might tend to our gardens amidst the uncertainty of climate chaos. In the next section we will look at some existing and emerging practices to deal with uncertainty in the present moment.

<http://hellofosta.com/2013/10/07/the-future-mundane/>

<http://futureeverything.org>

<http://superflux.in/>

<http://www.tobiasrevell.com/The-Monopoly-of-Legitimate-Use/>

<http://www.the-incredible-shrinking-man.net/>

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<http://www.lisama.co.uk/>

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INHABITING UNCERTAINTY

I have realized that the past and future are real illusions, that they exist in the present, which is what there is and all there is.

Alan Watts

Alongside improvisation in such domains as art, music and warfare discussed in other chapters of this book, there is a range of attitudes and situations which take uncertainty as a given. Approaches that involve being playful, meditating, tinkering, responding to disaster or living in cycles of feast and famine are all useful approaches for living with uncertainty. What can we extrapolate from these attitudes that could encourage us not to shy away from uncertainty, but to inhabit, embrace and evolve through it?

Interesting examples of a tinkering disposition are *jugaad* (जुगाड़) in India and *shanzai* (山寨) in China. Jugaad is a colloquial Hindi term for things tinkered together with any available materials - often innovative solutions to a problem using scarce means. Shanzai is a peculiarly Chinese style of mash-up hardware solutions, innovative simplifications or knock-offs through what would be considered piracy or theft elsewhere. Both approaches to creative problem solving celebrate tinkering, risk-taking and the innovative use of available means in a process of improvised small-scale manufacturing. In

both approaches there is an immediate problem which requires a quick-and-dirty solution. Rather than waiting for an influx of money, experts or high technology, they use materials and ideas immediately at hand. Without much (if any) planning, these elements are appropriated, reused, pulled apart and repurposed into the most obvious solution that can be created with a minimum of effort and resources. In other cultures similar techniques are applied by tinkerers, hackers, makers and other kinds of DIYers.

Even though from the perspective of a maker culture these are wonderful examples of dealing with adversity, when they are haphazardly applied in wider social contexts issues of interdependence arise. For example, what if a ramshackle jugaad vehicle falls apart on a busy highway, injuring a child and causing a traffic jam that prevents the ambulance from getting to the victim in time? One person's embrace of uncertainty is inflicted on unsuspecting passers-by, potentially creating a much bigger problem. Justin Pickard describes this situation as the socialisation of uncertainty - decisions and actions of an individual with good intentions making the world more uncertain for others.

The precarious jugaad chain reaction in the example above may strike us as being of little consequence in the bigger picture, but the same logic can be applied to multinational banking conglomerates outsourcing financial risk to all of us and causing the cascading economic crisis of 2008. So while tinkering with your next jugaad invention, it might be a good idea to use some of the foresight tools - not to

predict the future, but to safeguard others from unexpected side effects of your inventiveness.

Creativity and crisis

It is often said that creativity thrives in crisis. As the old saying goes: necessity is the mother of invention. The *jugaad* and *shanzai* speak to this principle. This is not to say that we should rejoice when crisis strikes, but that there are ways to develop attitudes that will help us survive crises when they happen. In his book *Full Catastrophe Living* (1990), psychiatrist Jon Kabat-Zinn introduces mindfulness meditation as a practice to help us live with catastrophes great and small in our daily lives, from chronic illness to addictions, accidents and loss. The eight-week course Kabat-Zinn and other trainers offer in hospitals and community centres across the globe (called mindfulness-based stress reduction, or MBSR) has its core in Buddhist insight meditation practices -such as *Vipassana* (विपश्यना), *Dzogchen* (ཐོགས་མཆོག་ལྷོ་མོ་) and *Mettā* (मैत्रा)- but is not taught in a spiritual tradition. It is rather a set of insights and techniques to live fully in the present moment, come what may. Mindfulness and other meditative practices are designed to help us find equanimity in the face of any maelstrom the future might bring.

On the opposite side of the equanimity spectrum we can find another form of dealing with uncertainty, the Hindu concept of *lila* (लीला). *Lila* cannot be translated literally into English, but it might be described as euphoric, uncertain, divine play and the magic of a creative act.

Lila is similar to the concept of *Ludus Amoris* in Western mysticism, where the god plays with the soul, in a state "between the onset and the absence of the joyous transcendental consciousness" (Underhill), in other words a state of uncertainty. Whether divine or not, a playful or irreverent disposition toward the future can lead us in unexpected directions and thereby away from inevitability.

Play opens up a sweep of possible futures that might not be accessible through "consensus reality". Linz-based Time's Up developed a series of play spaces and physical narratives that encourage a playful and curious attitude in audiences. They design "playful hardware as a social glue" and consider their productions, such as the *Sensory Circus*, as playgrounds. They surround the playground with spaces to socialise, to compress and decompress before and after an experience and to create meaning through exploratory behaviours and informal conversations.

Similar to improvisation, play thrives on the creative excitement grounded in uncertainty. Especially in collective play and games, the elation of the moments when everything comes together (but also when everything falls apart) is without equal. By playing we create situations with the requisite level of uncertainty for interesting things (whatever they may be) to emerge. However, in games with no rules the process might be too uncertain to be enjoyable; on the other hand if the rules are too many and too strict, there will be no space for creative change. One of Italo Calvino's *Six Memos for the Next Millennium* (1988) is "multiplicity". He says that we should be "capable of weaving together the various branches of knowledge, the various

'codes' into a manifold and multifaceted vision of the world". He also talks about multiplicity thriving when rules are imposed as boundaries to work within. Like systems in poetry or rules in a board game, they might seem artificial or restrictive, but can actually give rise to immense freedom and opportunities for creativity.

An interesting game that plays with the certainty and emergence of rules is *Nomic*, "a game in which changing the rules is a move. ... The primary activity of *Nomic* is proposing changes in the rules, debating the wisdom of changing them in that way, voting on the changes, deciding what can and cannot be done afterwards, and doing it. Even this core of the game, of course, can be changed" (Suber).

In just one session of *Nomic*, whole worlds and societies can be created, tested, deconstructed and reconstructed several times. Such games can teach us to let go of any pretense of certainty and to thrive in a world in flux.

Iterative design

Alongside play and games, the process of creation itself (in art, design, science, engineering, gastronomy, or any other human endeavour) is a strange attractor of uncertainty. It begins with curiosity and a courage to dive into a process without knowing where it might take us. It is always risky and prone to failure. One of the successful tactics to minimise total collapse is iterative design, where a work is developed through several cycles of prototyping.

This process has its origins in software development, but has since spread across different disciplines. The first iteration ends in creation of a minimal but working system. Each subsequent iteration adds additional functionality but also risks of failure due to increased complexity. The risk tends to get minimised, as there is always a working previous version that we can fall back on, rather than building a mammoth system in one go, only to realise that it doesn't work after spending months creating it.

An important part of iterative design is perpetual testing of the prototypes in real, or even extreme situations and real-life labs, or labs enacted by experiments. An interesting example of this is the *Chaos Monkey*, an extreme form of intense randomised stress-testing of a given infrastructure to prevent catastrophic failure.

Netflix has a server architecture that currently serves a pretty high percentage of all of the internet's traffic, due to their streaming video service. One of the most interesting things about their server architecture is that they routinely attack their own systems. They have a tool called Chaos Monkey that randomly disables their own production instances to make sure they can survive that common type of failure without any customer impact. ... The philosophy is simple: by building a server architecture that expects failure, the system as a whole can learn how to withstand bigger and tougher obstacles even if they don't know exactly when or how they will occur in real life. (Benson)

The *Chaos Monkey* could be compared to military disaster drills such as the NNNI (Nista Nas Ne smije Iznenaditi) or Nothing Can Surprise Us) exercises from the former Yugoslavia, as well as to FoAM's work with future pre-enactments mentioned in the previous chapter, where they stress-test an idea of a possible future by throwing it into the randomness of social improvisation.

"I do and I understand"

I hear and I forget, I see and I remember, I do and I understand. The common fortune cookie wisdom originally from Confucius speaks to the necessity of experiencing something in order to truly understand it. Both prototyping and pre-enactments are based on the same principle, that can be considered a design disposition for dealing with uncertainty. The interest among futurists to move from data-driven prediction to embodied experiential futures is yet another sign that living with uncertainty might be more valuable than trying to predict it. Which brings us to Taleb's concept of anti-fragility, already discussed in earlier chapters.

Taleb uses the metaphor of a hydra, a creature who grows a new head every time one is cut off. He argues that fragile things cannot deal with uncertainty, but, he says, neither can robust ones. Say you hit a rock with a hammer, the rock will chip precisely because of its robustness, but if you try to hit a lake with a hammer, the water will part, create some waves and then resume its previous shape. So we could say that the lake is resilient. But Taleb looks beyond resilience

to find which systems improve through shocks and unpredictability; muscles that become stronger when pushed to the limits or the antibiotic-resistant bacteria that "learn" from failure and keep persisting. There are several principles to increase our anti-fragility that you can find in the *Heuristics* section of this book.

In this non-exhaustive collection of cases, we have attempted to illustrate different attitudes that flourish through uncertainty: curiosity, frugality, inventiveness, improvisation, playfulness, equanimity, resilience, pro-active engagement, prototyping, rehearsing, anti-fragility, and so on. By cultivating these attitudes we might be able to lessen the fear of an uncertain future and to diminish the need for prediction. When combined with the atemporal perspective of living in a string of perpetual present moments, where past and future melt into the long now, we can loosen the chains of inevitability. We can begin to grasp what agency we might have in creating our own futures, or in FoAM's words, encourage everyone around us to "grow your own worlds".

Keeping the perspective of the long view and the interconnectedness of complex systems allows us to act responsibly in our everyday lives. Each of us is but a link in a larger set of social possibilities we call the world. As active agents in our own lives we do not have to wait for the future to unfold; as Gandhi used to say, "be the change you want to see in the world". And in the words of Justin Pickard at Data Ecologies 2014: "The way you live today reflects the kind of future you want to live in tomorrow."

<http://www.bunniestudios.com/blog/?p=284>

<http://timesup.org/sensorycircus>

<http://lib.fo.am/nnoi>

INTERMEZZO: FEAR AND DESIRE

Repersonalising the impersonal and depersonalising the immersional

Conceptions of "the future" - how does framing time as "future" inform our outlook of what is desired, attainable, controllable, meaningful? What happens when we reentangle an abstract, intellectualised, rationalised and rational, Aristotlean, ... "future" with deeply personal fears and desires: ressurecting "fate," "destiny," "providence," "divine or demonic intervention" as counterparts and counterpoints to "foresight," "transmedia storytelling," "space invaders"?

Conversely, how might our per-



spectives and practices appear when we attempt to objectify the spectrum of our subjectivities, placing our positions in quotation marks and seeing what emerges in the spaces between identities? Changing ourselves by changing the world by changing ourselves: an oscillating centripetal-centrifugal cycle?

INTERMEZZO: FEAR AND DESIRE

FUTURES COMMONS

Gated futures

Guerrilla futurists

INTERMEZZO: FEAR AND DESIRE

GATED FUTURES

The future is already here — it's just not very evenly distributed.

William Gibson

The question of who owns the future is answered easily - we all do. The future is a commons, something shared by all of us, and as such is subject to the challenges that come when many different interests attempt to use that commons to further their own particular interests. Seeking to further your own interests is not in itself bad; as living, breathing beings we all have needs that must be met in order to survive. Ensuring those needs are met is simply a fact of our existence.

We would like to manage our commons - whether a community pasture, an offshore fishery, the atmosphere of the globe or the "territory" of the future - in a way that is sustainable and beneficial to all. But this is easier said than done. The "tragedy of the commons" a conceptual archetype in the field of systems thinking coined by Garrett Hardin, describes the dynamics that result in the degradation of a commons as the result of its exploitation. At the root of this archetype is a pattern of human behaviour where users of a commons exploit it to maximise their own benefit without regard to the interests of others, or the harm done in the long term.

But is the future something that can be owned at all? And when viewed from the perspective of futures studies, who owns the plural

probable, possible, and preferable futures that are out there?

If we understand the "future" as a complex adaptive system, then the future emerges from the collective interaction of a multitude of entities in the present - including technological, economic, and social systems, entities such as governments and corporations, and billions of individual human beings. Perhaps we each own our individual futures while simultaneously holding a stake in (although not ownership of) the collective futures that will come into existence and manifest themselves as our future presents and just desserts.

Right now the future is sold to us in a multitude of ways - TED



talks that tout the hottest new ideas, products that promise us better lives (dependent of course on our buying into them), mass media stories of what the grand world of tomorrow will be like, and the subtle but much more influential media exposure that gives us glimpses of possible futures.

In the 1960s the public view of the future was shaped more by TV series like *The Jetsons* and *Star Trek* than by the futuristic visions that emerged from think tanks and individual geniuses of the time. In the 2010s we have seen television programmes like *Person of Interest*, *Black Mirror*, and *Orphan Black* present a view of a near future defined by surveillance states and invasive technology.

Speculative fiction has long been a source of futures visions that permeated the public imagination. Writers like Arthur C. Clarke, William

Tenn, Robert A. Heinlein, Ray Bradbury, Robert Sheckley, William Gibson, and Bruce Sterling have had a disproportionately large influence on future visions in popular culture.

Less visible than these writers but perhaps even more influential in injecting futures concepts into government, military, and corporate thinking are a cadre of professional futurists, foresight practitioners, strategic planners, and academic researchers.

The History of Futures

Early in its lifespan as a legitimate profession, futures thinking converged and crystallised around a small number of endemic forms and methods, practitioner communities, and consumer types. Futures thinking became associated with a limited range of methods related to scenario planning for government, military, and big business, much as transmedia storytelling has coalesced around the use of alternate reality games and branching web-based narratives to market consumer brands and entertainment properties. Now, both domains are being infiltrated and transformed by practitioners from other areas and from within - busily hybridising their diverse practices and approaches with monolithic castles that have left themselves open for reinvention and resettlement in a changing environment.

A commonly told origin story of strategic foresight is that it emerged from the American military industrial complex in the mid-20th cen-

tury, particularly from the RAND Corporation, Stanford Research Institute, and the Hudson Institute. These organisations began to develop and diffuse their practice through the creation of future scenarios exploring what combat might look like in the Cold War, and indeed any "hot war" that might emerge through the collapse of Cold War circumstances. Running quantitative scenarios to (relatively) safely explore the possible outcomes of a nuclear exchange was seen as preferable to actually engaging in a nuclear war.

During the latter half of the 20th century, in response to cross-spectrum changes in technology, economics, geopolitics, and cultural transformation brought about by new imaginaries about the future and the rise of psychedelic drugs, futures thinking began to diffuse outward from the military industrial complex to the private sector and design, in the process shifting in focus and methods from quantitative forecasting to qualitative visioning.

Many of the figures who had played a part in formalising the domain began to drift across the divide between the counterculture and the business establishment in the United States, Europe, and elsewhere. This resulted in blurred boundaries for futures thinking as it rose to prominence simultaneously in big business, government, and the counterculture. As the microcomputer revolution began to accelerate in California, visions of the future played an increasingly important part in driving the growth of new industries, new worldviews, and new kinds of social behaviour.

Today, futures practice is again diversifying, for some of the same reasons that it did in the last century. Artists, designers, management consultants, politicians, scientists, marketers, and advertisers are all integrating futures practice into their domains, and providing traditional futurists with new ways in which to contextualise their practice and their process of communicating the results. This exchange is producing an explosion of diverse futures methods, including the emerging practices of design fiction and experiential futures, but is also shocking the futures establishment as it struggles to swallow its own medicine and transform sustainably in the face of staggering change.

Futures scholar Zhan Li has identified a "deep uneasiness" in the futures studies field around the "legitimacy and utility of amateur, popular culture-steeped futures content" that threatens to "disrupt and usurp" futures professionals. In this era of renewed transformation, the role of the expert futurist is being called into question from diverse angles, and the value of the practice is being challenged and re-evaluated from all sides, including from within the profession itself.

Futurist Wendy Schultz (in *The History of Futures*) has articulated a version of the origin story which includes an approach to understanding futures starting from positions further back in human history, rightly situating the recent "formal methods" in the context of a much deeper human tradition:

- 1st wave - Oral Tradition; e.g. shamans, mystics, priests and other
- 2nd wave - Early Written Age; e.g. Ibn Khaldun, Nostradamus, Thomas More, Robert Boyle

- 3rd wave - Extraction and Enlightenment; e.g. de Condorcet, Comte, H. G. Wells, Jules Verne, William F. Ogburn, Soviet planning
- 4th wave - Systems and Cybernetics; e.g. RAND, SRI, la prospective, Herman Kahn, Shell, GBN, The Limits to Growth
- 5th wave - Complexity and Emergence; e.g. integral futures, causal layered analysis, experiential futures, anticipatory systems

Seen from the point of view of futures as a commons, those who push a particular future agenda of their own (for whatever purpose) are seeking to enclose for their individual use that which we are all meant to share. It is a natural right of all humans to be able to envision their own future and actively strive to achieve and communicate it.

We can't decry just those who have come to dominate conversations that shape our visions of the future. Even so, it can't be ignored that there are those, the "hedgehogs" among us (c.f Tetlock), who will print their own bibles of the future and proclaim these as being the True Word - which will then be taken up by an army of bloggers, journalists, start-up entrepreneurs and fanboys who repeating their mantras and buzzwords as gospel.

An example of that particular type of rhetoric is Cory Doctorow (*Boing Boing*) talking about *Wired* editor Chris Anderson's last book:

Makers is a thrilling manifesto, a call to arms to quit your day job, pick up your tools, and change the future of manufacturing and business forever. It's a recipe for a heady cocktail of open business; free software; low-cost, global coordination;

and community cooperation that Anderson credibly suggests will forever change the world.

For a more tongue-in-cheek reflection, there is HBO's *Silicon Valley*, where a dinner guest casually blurts:

Okay, we're making a lot of money. And yes, we're disrupting digital media. But most importantly, we're making the world a better place through constructing hierarchies for maximum code reuse and extensibility.

For a more disquieting example, here is Noah Shachtman in *Wired* talking about DARPA's *Plan X*:

But you can't expect the average officer to be able to understand the logical topology of a global network-of-networks. You can't expect him to know whether it's better to hook a rootkit into a machine's kernel or its firmware. If cyberwar is going to be routine, DARPA believes, the digital battlefield has to be as easy to navigate as an iPhone. The attacks have to be as easy to launch as an Angry Bird.

Pop-Culture Futures

When viewed from the outside the futures field looks somewhat different than from the inside. Many of the more subtle and differentiated practices remain unknown. Several people involved in writing this book have only recently been introduced to foresight as a profession. This has provided a great opportunity to think about what the field looks like to a well-informed all-round journalist with an interest in the future but not so much exposure to "insider knowledge". In the next few paragraphs, Marta Peirano talks about a popular view of who owns (access to) the future.

The first source of information about the future can be labeled **threat management**, where we foresee potentially destructive events in order to contain them, or at least to make them less destructive. The nature of this category is self-evident and includes not only natural disasters but also political ones, from droughts and pests to invasions and pandemics. It is the kind of serious stuff that can make leaders and break civilizations, so future tellers of this type, from the old Oracle to today's consultants, hold a great deal of power. The second is **progress**, which includes city planning, technical innovation, scientific discovery and all those developments that (ideally) improve the lives of the many and define the great achievements of the human race.

Then there is the wild and woolly category of **speculative fiction**, authors (like those introduced above) who Alvin Toffler suggested suffer from a "habit of anticipation". Another group are those whose

business is based on **short-term futures** such as horse racing results or political elections. And finally we have **religion**, which controls the present with the threat of future punishment and the promise of eternal reward.

These five categories are separated by uneven and shifting borders. Some of them have been more culturally successful than others; when we think about future prophecy we often think first of the masters of science fiction or the manic street preacher on his soapbox.

The future today, and in some peoples' perspectives since the Enlightenment and the industrial revolution, belongs to practitioners whose business model is progress, whose apparent goal is disaster management, and whose language is religion. We call these people **technocrats**.

The people who own the future - our present-day gurus and oracles - are not amateurs or mere enthusiasts. Nor are they the exceptional visionaries with a talent for storytelling and a penchant for the dramatic, like Marshall McLuhan or Buckminster Fuller. They are industrialists. They run multibillion dollar companies and serve as consultants and board members for other industrialists. They also consult for policy makers on a wide variety of topics (city planning, threat management) and dispense advice that, unshockingly, tends to benefit their closest friends and interests in the name of progress as a social activity.

The rhetoric of progress is enchanting but far from neutral, and its effects run deep. There is nothing conceptually new in the next exciting breed of phrenology we call neuroscience (except that it's about the inside of the head) or the new iteration of statistics we fashionably call Big Data (except that it's applied at larger scales than previously). As with nuclear warfare or intensive farming, the difference in these recent scientific pursuits compared to those that predated them is one of scale, scope and degree.



While it is easy (and often justified) to condemn those who dominate the conversations that shape our visions of the future, we must also look at what we can do about it ourselves. How can we proactively engage in the political landscape? What can we do to bring futures to the people? Where our Futures Speakers' corners? Is there anyone listening? How do we imbue education with futures literacy, so it becomes our children's native language? What mindsets do we need to cultivate to be able to own the future?

As Winston Churchill said: "The empires of the future are the empires of the mind."

GUERRILLA FUTURISTS

Shaping the future is an act that promises the expanse of freedom, but also carries the weight of responsibility. This responsibility is not strictly limited to the design and execution of sweeping and systemic programmes of societal transformation. It also applies to other and more mundane approaches to action, such as speaking. Humble as it sounds, speaking about your or somebody else's future is an act of power. It is a "speech act" where language takes on a performative function. Our prefigurative thinking - the way we imagine and articulate the shape of things to come - actually affects the shapes of things to come, and the ways in which we perceive them (cf. Speech Act Theory). The sheer naming of something is an act of power. Even knowing the name of something is in some sense a claim to power over that particular something. God told Adam to name all things in Eden, in order to make them his.

As explored in the previous section, contemporary media ecologies are dominated by a very specific type of conversation about the future, delivered by a limited range of technocratic experts with either unclear agendas or those strongly influenced by self-serving interests and positions at heads of state and boardroom tables.

Speaking about anything is a political act. Just think about how your nation's history has changed with the ebb and flow of political tides and change of regimes, or how our understanding of the natural world has changed through the advent of modern science. And that's "The Past" but, if the past and the way we are taught (or forced) to narrate it is so vulnerable to power, why should we assume that the Future is immune to it? The Future is as exposed to re-narration as the past. Maybe even more so, since there is more at stake. And while the technocrats might drone on about the other side of tomorrow, it's important to remember that the future is not their exclusive domain.

Those technocrats who get the most exposure in our media and culture with their visions of the future love to carry on about it from their inherently biased vantage points, often camouflaged as sources of an objective truth. This is no shock; we all do it. But the scale is different, as these subjective points of view are debated, disproved, and validated as they move across media ecologies and cultural channels, in the process creating what we call knowledge.

Some of these information distribution systems are referred to as scientific. Some are called educational, others religious. And too often, many insightful and unique perspectives on the future get locked in these exclusive ecosystems, away from most of the population. They don't need censorship or a paywall; just a language. For over a millennium, the official language of science was Latin - a very effective way to keep the masses out of knowledge-generating activity. Today the jargon of the military-industrial complex dominates even the pages

of this book, sprinkles with terminology like strategy, tactics, guerilla warfare, forecasting and others.

Participating in the production of knowledge in the 21st century presents the same dilemma, with different specifics. The official language of the future is often English, mostly spoken by educated Western males, and distributed through a dwindling cross-section of the mass media. Participation in other domains that connect to a conversation about the future may require different vocabularies entirely today, like programming languages, statistics, or skills in branding and social media marketing. And access isn't free.

The entry cost to producing knowledge using computer science, mathematics, or online media can be insignificant for many, but it is still unachievable for most. And the chances to be invited to a TED talk to share your vision of the future are defined through the use of these languages. Here the bar is even higher, involving greater time commitments, higher costs, and particularly skewed standards of excellence as judged by a technocratic elite, of a particular flavour that prevails in the bastions of late capitalist regimes. This is called the social entry cost. And those who just can't afford it (or refuse to be a part of it) remain on the outside of systems of knowledge production, creativity, and futures thinking.

A horse, a horse, my kingdom for a Trojan horse!



So do you have what it takes to imagine and co-create knowledge about your future with other members of your family, your community, your collaborators, your nation, or your planet? Perhaps. You might be able to estimate the likely outcome of a football game, or to imagine what line of work you'd like to pursue once you finish school. On the other hand, you are unlikely to be asked about the impacts of an environmental policy change halfway across the world, or accurately determine the perfect moment in which to launch a mission to Mars. Unless you are an expert.

It seems like common sense that some types of futures require the data and opinions of experts, including economists, politicians, science and technology gurus. And there is a reason why the priests of The Church of Tomorrow are who they are: secular science was one of the Trojan horses the middle-class used to take over the competitive advantage of the Church as a monopoly holder on knowledge, and gather it for themselves.

This is how the high priests holding up the goat's heart lost their monopoly on the future, transferring much of their power to the researcher, the management consultant, and the expert holding the Excel spreadsheets and PowerPoint presentations. Two centuries later, capitalism has turned everything, even imaginary ideas about the world of tomorrow, into merchandise; and it was as early as the

1950s that the Situationists began to warn that "culture is the commodity that sells all other commodities". For them, culture - the way we do things and talk about things - essentially an immaterial thing - was the mother of all commodities. As any conversation about the future is a cultural process, and possibly undertaken in order to improve or enhance culture, these conversations about the future can now be commodified and sold by those who declare themselves their expert vendors.

So where is our Trojan horse? And what? How can we use foresight to promote emancipation, desegregation and empowerment? How can those of us currently marginalised in conversations about the future get our ideas to wrestle with the watered down treatises of the mainstream political debate? How can we move from the periphery to the centre stage of political, social, technological, and environmental discourse? One of the answers is to become a *Guerrilla Futurist*.

Descentralizar el Futuro

The guerrilla wins if he does not lose. The conventional army loses if it does not win.

Henry Kissinger

The strategy and tactics of guerrilla warfare tend to focus around the use of a small, mobile force competing against a larger, more unwieldy one (*The Transformation of War*, Van Creveld, 1991). Rather than mounting a massive all-out assault on the powers that be, guerrilla

warfare focuses on organising in small units, and depends on the support of the local population. Guerrilla warfare involves small, independent, self-coordinated units running subversive tactical missions, and creating small or mid-scale disruptions rather than Herculean victories.

But the most interesting feature of the approach is that true guerrillas accomplish their goals while relying on the moral support of the local community - making them the most resilient and microsocially relevant combat force possible. And as a decade of US failures in Afghanistan have shown, guerrilla warriors can prove nearly impossible to eradicate.

Stuart Candy, author of *The Futures of Everyday Life* and professor at OCAD University in Toronto, teaches a summer course for emerging futurists called *Guerrilla Futures*. According to the course description, the goal is not to create sweeping agendas of change through a slow and deliberate partnership with the technocratic establishment, but to "systematically picture how alternative worlds could unfold; manifest those visions playfully and compellingly in a range of media; and make these narratives available in the real world, via live urban interventions for unsuspecting audiences to encounter." Candy invites his students to prepare for rigorous imagination, the genuine exploration of change, and first-hand experimentation in unsolicited transmedia storytelling.

Candy envisions *Guerrilla Futures* as a domain existing in the overlap of traditional strategic foresight and futures thinking methods,

birthed in the military industrial complex and matured in the equally cool and calculating private sector; and Tactical Media, a form of media activism that "privileges temporary, hit-and-run interventions in the media sphere that engage and critique the dominant political and economic order".

Some of Candy's work as an experiential futurist explicitly reflects this drive towards critical and on-the-street glimpses of the world of tomorrow inside our everyday lives today. His *FoundFutures: Postcards from the Future* project saw four different versions of Hawaii ravaged by climate change mailed out to the homes of over one hundred community leaders in the Honolulu area in 2007, complete with uncannily casual messages that amplified the experience. *FoundFutures* continued with a project in Honolulu's Chinatown, involving local residents in a discussion about how their neighbourhood might change in the face of rampant globalization, before planting subtle yet subversive artifacts from various dystopian future scenarios throughout the community's storefronts and alleyways. The Honolulu *Advertiser* referred to the project as "Pranks with a Purpose", a satisfyingly concise description of the guerrilla futures practice. More recently, the *ByoLogyc* alternate reality game (*The Mission Business*, 2012) explored the Guerrilla Futures methodology through a pervasive narrative that delivered interactive and immersive simulations of the future, a project described more at length in the Case Studies chapter.

ByoLogyc even made an appearance at the NXNE interactive technology conference and won an award for most innovative new technol-

ogy company at the 2012 World Future Society conference, where they masqueraded as real-world immoral innovators willing to arrogantly wield advanced biotechnological solutions in the name of profit rather than positive change. Their initial goal was to create interactive transmedia scenarios for public consumption that would come to life around mass audiences, immersing them in a pervasive and dystopian vision of the near future. But is dystopia really the best way to provoke behavioural change, and drive people towards a critical engagement with emerging technology platforms and the corporate entities that wield them? Might it not have been more effective to focus on cultivating aspirational future scenarios about synthetic biology from across a diverse cross-section of the population, rather than scaring them into a desire for futures brighter than ByoLogyc's?

This raises one of the more controversial and open-ended points about guerrilla futures. Does a practice designed to infiltrate and subvert show promise in surfacing more and more diverse conversations about sustainable and aspirational futures? Does it enable a kind of futures literacy within populations that encounter public installations and artefacts, or does it inspire a distrust of those attempting to use playful and participatory means to explore the futures? While culture-jamming activists like The Yes Men do provoke laughs and then reflection when using tactical media to raise awareness about problematic social and political issues, are they really just making serious issues into entertainment?

A slightly different approach is taken by FoAM in their *Borrowed Scenery* Alternate Reality Narrative. This story about a possible future

or a parallel present deliberately takes a vision of a preferred future by its designers, one where plants become a central aspect of human society. The emergent tactics they deploy is something Vinay Gupta calls "visionary adaptation" in a co-created book called *The Futures We Deserve* (2012): create a vision, then find ways to adapt reality to this vision, and keep adapting your vision to emerging realities. In *Borrowed Scenery*, the desired image of the future is spread across a physical narrative, an online environment and a series of events and workshops designed for lasting impact. After the story ends, the effects in real life remain: a plant-based harvest festival, seasonal programming in a cultural house, a series of walks about urban edibles, an app to map dwindling biodiversity, and so on.

Another interesting example of guerrilla tactics known as "bombing from within" can be found in the EdgeRyders, a community of citizen-experts that started as a project by the Council of Europe and the European Commission and evolved into a distributed community focusing on sharing and collaboration. They have recently launched a project called *Spot the Future*, "a platform for scanning the horizon for future builders" that originated outside the usual bastions of power, in Georgia, Armenia and Egypt.

Finally, when talking about taking the future into our own hands, the *Institute of Collapsonomics* is a perfect place to end. In the words of one of the founders, Dougald Hine, the basic question of Collapsonomics is: "How do we make a good job of living through difficult times?" Simultaneously a philosophy, a literary and social movement, a speculative institution and a series of events, Collapsonomics doesn't fight

collapse but embraces it. Through writing and direct action they explore what might continue to work once systems we take for granted - from capitalism to plumbing infrastructure - begin to fail.

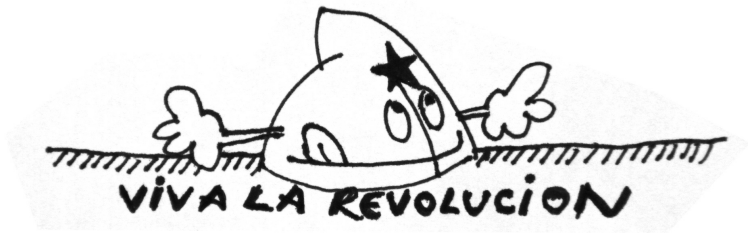
One guerrilla or anarchist tactic that Collapsonomics makes good use of is "the absurd". Not only do some of their solutions seem absurd (like introducing "black elephants" as amalgams of black swans and elephants in the room), but they also point out the absurdity of our civilisation. When a recovering capitalist in the form of a Greek shipping magnate talks about humanity "riding the train to extinctification" at a World Economic Forum dinner, and women need to learn to become solar engineers and electrify their villages to be able to learn how to read, we cannot help but find it all a bit absurd. Perhaps Alfred Jarry was right when he invented 'Pataphysics, the science of imaginary solutions. If we cannot fight the powers that be using their rationalist, materialist language, perhaps we can baffle them by acting not as a well-rounded civilised people, but by transforming into something like a pufferfish:

Forget trying to pass for normal. ... Woo the muse of the odd. ... Don't aim to be civilized. Don't hope that straight people will keep you on as some sort of pet. To hell with them. You should fully realize what society has made of you and take a terrible revenge. Get weird. Get way weird. Get dangerously weird. Get sophisticatedly, thoroughly weird, and don't do it halfway. Put every ounce of horsepower you have behind it. Don't become a well-rounded person. Well-rounded people are smooth and dull. Become a thoroughly spiky person. Grow spikes from every angle. Stick in their throats like a pufferfish.

Bruce Sterling

Powerful political questions remain on the table when it comes to the ongoing development of foresight and futures thinking practice, and transmedia storytelling. Is there more to be gained from using emerging, cross-disciplinary, and transcultural tools to bring new stakeholders to the futures conversation, or to help technocratic institutions reboot themselves with the goal of more open-source ownership of the futures? Do transmedia and guerrilla futures practices represent a powerful new approach to foresight, or a clever way for us to distract ourselves in a world of serious change? Does the invitation of new stakeholders and new methods into the creation of stories and visions of alternative futures lead to emancipation, or merely a new form of entertainment?

Regardless of the approach and methods, we must somehow become time-shared builders, dwellers and owners of our own futures. The future must be explored by a diversity of human voices and imaginations, not exclusively by an ivory tower of technocrats. What better way to emphasise this shift in polarity than to conclude with a statement uttered by Genghis Khan, an emancipatory American president, and a computer software visionary: "The best way to predict our future is to invade it."



Tactical Media: http://en.wikipedia.org/wiki/Tactical_media

http://www.appropedia.org/TheFWD_index

<http://fo.am/borrowed-scenery>

<http://edgeryders.eu/content/spot-the-future-about>

<http://collapsonomics.org/>

<http://www.barefootcollege.org/solutions/solar-electrification>

TENT POLES AND RABBIT HOLES

Models? Mental!

Intermezzo: Dissolving in statistics

The meaning spectrum

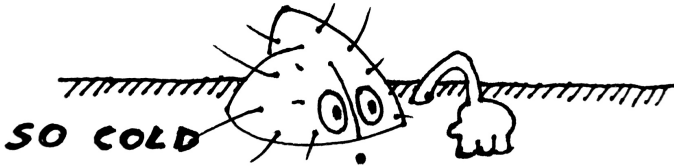
Transmedia storytelling

Intermezzo: Transculture and futureculture

Choose your hat!

GUERRILLA FUTURISTS

MODELS? MENTAL!



Previous chapters have explored binary concepts of certainty versus uncertainty and top-down technocracy versus bottom-up guerrilla tactics in the struggle to establish a diversity of conversations about the future. Both of these topics speak to our needs and desires to seek out patterns often seeking to explain them with models that appear at times to be simultaneously bafflingly complex and deceptively simplistic.

It is part and parcel of human nature to try to understand the world through a ceaseless process of meaning fabrication (and fabrication) and the resulting creation of mental models. These mental models - like the concepts of right and wrong, attractive and unattractive or appropriate versus inappropriate - serve as ways to navigate the world around us so we can understand what it all means and how to respond to it.

This ability to create a mental model of the world and base our behaviour upon it is an essential tool for survival. A human wandering

the African savannah was well served by a mental model that the tawny shape of a large cat moving slowly through the grass represented a threat that required a particular set of immediate responses. Other mental models were created, and often codified, into social and cultural structures and institutions. These are the values that normalize what is considered appropriate behaviour - laws designed to define the boundaries of personal freedom as established and sanctioned by the state, or religious creeds and dogmas that set out what is spiritually acceptable or unacceptable to think or believe.

From the individual level to that of a global society, mental models in their various forms provide vital frameworks for understanding the world and moving inside it. But, essential as they might be, they can also become obsolete or incorporate serious flaws deep in their design, resulting in behavior that is inappropriate or downright dangerous. Racism, for example, might be based on a mental model that may once have triggered an appropriate response to the presence of an outsider in your territory. In today's multicultural, multiracial societies, however, such a model is obsolete, among many other things.

A fundamental challenge for the futures field is precisely to identify, assess, and deal with a multitude of mental models that frame our understanding of a broad range of issues. Among the critical questions that futurists must come to grips with is "How do we create the mental models that help us bring meaning to a world that doesn't exist yet?"

MODELS? MENTAL!

INTERMEZZO: DISSOLVING IN STATISTICS

"Oh to be dissolved by statistics. It's so long since love could do it."
(Musil)

Has "Big Data" become mysticism masquerading as statistics and machine learning or is there something else? To what extent is "mysticism" simply an emergent property of the unfathomability of the vast and intensive computational processes inherent in the cosmos? Are the calculable and the unknowable mutually exclusive? Are there moments, life states, states of consciousness in which we can know a simultaneity of past, present, and future, and from there, simultaneously shape the future by reverse-engineering the past? What would futurism, futurology, foresight, forecasting, or fabulation look like if it was designed in such states? Momentaneous versus simultaneous.

THE MEANING SPECTRUM

Data is not enough! In the world of futures consulting in particular there is a tendency to throw data at people when talking about the future. In part, this focus on data and information is a result of the methodologies the futures field most commonly uses. The tools used quite naturally affect how a problem and its solution is viewed. Psychologist Abraham Maslow said in 1966, "I suppose it is tempting, if the only tool you have is a hammer, to treat everything as if it were a nail" (Maslow, 1966 p. 15). In much the same way, using tools that are heavily skewed towards data collection, analysis, presentation, and interpretation will result in a datacentric perspective of the future.

However, in Shedroff's "Understanding Spectrum" data is at the lower end of the spectrum that extends through information and knowledge to wisdom. Data is vast flood of things that bombards our senses and is the raw material from which understanding emerges, but is rarely suitable for use in its initial form.

The number "52" for example may be entirely accurate as a data point but is completely worthless by itself. A very natural response from those hearing "52" is to ask "52 what?" On its own a data point is often meaningless. For example, "52 degrees" becomes more meaningful - we know now at least that we are talking about temperature or per-

haps location or maybe geometry. The addition of context is particularly important. For example, in the context of sailing "52 degrees" may indicate a course to steer while in the context of deciding what to wear outside "52 degrees" could mean temperature (although whether we are in the United States, which uses the Fahrenheit scale, or in much of the rest of the world which uses Celsius has a significant impact on the meaning of this relatively simple statement).

The creation of relationships and patterns between different data points through accumulating, organizing, sorting, categorizing, and packaging it and putting into the appropriate context adds meaning and transforms data into information. The number "52" becomes increasingly meaningful information as we progressively add the word "degrees" and provide the context that we are rural western New York state in the eastern United States in late spring, looking at a bare flower bed and deciding whether we should plant a new type of flower now or later. The information that came with the plant notes that it is sensitive to freezing temperature, but we don't yet have everything we need to make a decision.

Information is only the second stage in the understanding spectrum. While consumers may understand the information presented to them, the addition of experience can both deepen and broaden that understanding.

Experience can be personal, local, or global:

- personal experience is unique to one individual

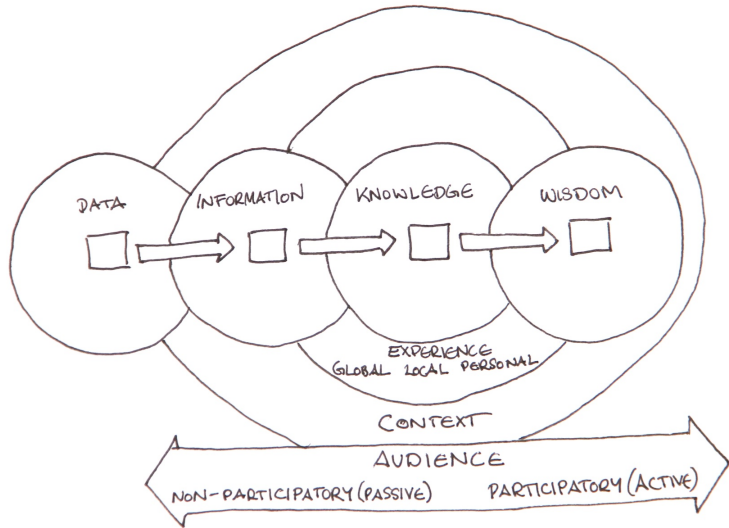
- local experience is shared by a group of individuals defined by some set of common characteristics, whether it is geographic, psychological, or simply the sharing of an experience itself
- global experience is shared widely and perhaps universally by all individuals within a society

With our gardening example, the information we have may not be sufficient to help us determine whether it is prudent to plant our flower in late April even though the temperature of 52 degrees F. Either our personal experience from past successes and failures or local knowledge accumulated by local gardeners over a period of many years would indicate that it is not wise to plant frost-sensitive plants in western New York state at that time of year because late snowstorms and overnight frosts are quite common.

It is the integration of both context and experience with information in both the presentation and the mind of the participant from which knowledge emerges. Knowledge should be the minimal goal that futurists aim for when communicating about the future. The development of compelling interactions with others and the use of a variety of tools and techniques that make clear the meaning of information is essential for the creation and communication of knowledge.

Wisdom, at the higher end of the spectrum, is characterized by contemplation, evaluation, retrospection and interpretation. Wisdom is a form of meta-knowledge comprised of mental and emotional patterns, relationships and processes that become integrated through experiences. Whereas data is the external to the individual and most

easily communicated, wisdom is the most internalized and is the most difficult to communicate to others. Only by providing the data and information we want to communicate and providing context and experiences that we can communicate wisdom and develop a deeper understanding in others.



Understanding Spectrum, adapted from Nathan Shedroff

The use of the understanding spectrum from a futures studies perspective can be illustrated by looking at the challenges of dealing with public perceptions of climate change. Massive amounts of data have been compiled over a period of decades, providing hard evidence of global climate change. Computer models have provided ad-

ditional data about what will happen under various scenarios. Numerous well-documented, well-designed reports have packaged that data into information that is then communicated to policy makers and the public.

In May 2014 information about the inevitable collapse of the West Antarctic Icesheet was released, resulting in sea levels rising as much as 3 feet/1 meter by the year 2100 and up to 12 feet/3.6 meters over the next few centuries. Although this information has massive long-term implications on a global scale, caused very little reaction in Europe and North America when it was released. A number of factors could account for this lack of response. One is information fatigue, with the general public gradually becoming "immune" to the steady release of more and more information about climate change. Another is the timeframes involved; events that are distant in terms of space or time - those that are far away geographically or temporally - are not perceived as having impacts that are as significant as events that are closer in space and time.

Based on currently available information presented about sea level rise, those interested in the future need to address such questions as "What does a 10-foot sea level rise mean?"

Data and information clearly are not enough to prompt significant action by either policy makers or the public. In fact, in a number of countries it appears that progress made over the past decade or two is slowly being rolled back by policymakers who ignore or deny the reality of climate change. From a futures perspective being right

about forecasting climate change and its impacts is a useless exercise if it doesn't prompt the development of strategies that address the key issues underlying climate change. Throwing more data into the mix is not likely to significantly alter current behavior and may well be counterproductive in that it simply adds further to the information fatigue that has already set in.

The understanding spectrum provides an effective framework for futures-oriented communication. Data and information are essential and the methods used to collect, analyze, interpret, and present them are important. The methodologies that do these are well represented in the futurist's toolkit. Futures approaches that move us forward to knowledge and wisdom, however, are virtually non-existent. It is here that the emerging disciplines of transmedia storytelling, design futures and experience design hold great promise.

TRANSMEDIA STORYTELLING

You may not need a strong, supple, thoroughly worked-out storyline. That doesn't mean that you can get away with a stupid plot made of chickenwire and spit. Get a full repertoire of tools. Just make sure you use those tools to the proper end. Aim for the heights of professionalism.

Bruce Sterling

Stories are an innate part of human beings. Storytelling is pervasive element of all human cultures. "Narrative starts with the very history of mankind; this is not, there has never been anywhere, any people without narrative; all classes, all human groups, have their stories, and very often these stories are enjoyed by men of different and even opposite cultural background" (Barthes, 1975). Stories have not just a social and cultural effect, but can cause responses at the neurochemical level in humans. Even a story with a simple dramatic arc has been shown to produce the release of chemicals like cortisol, which focuses attention, and oxytocin, which affects empathy (Popova, 2012). Humans respond to narratives from early in life (Nelson, 1989). Narratives can mold perceptions and affect the unconscious mind (Simmons, 2006, p. 29); provide insights into life and human nature and reflect the unconscious needs of human beings (McClellan, 2007, pp. 18-21); and are central to how humans perceive the world around them (Szulborski, 2005, p. 42).

The connection between story and emotion and emotion and meaning-making is important. Stories bridge the gap between intellect and emotion. Highly emotional stimuli, provided they are relevant to the viewer, are processed faster and hold attention longer than less emotional stimuli (Eastwood, Smilek, & Merikle, 2001). Understanding the role of intellect and emotion in decision-making processes is important when determining how to present information in scenarios, forecasting, or other futures-oriented projects. Futures projects by their very nature are intended to challenge existing perceptions, mental models, and organizational structures. As a result they often provoke a range of emotional responses – uncertainty, confusion, insecurity, fear, and others – that lead to resistance to change. One of the most significant applications of storytelling from the perspective of foresight professionals is their use helping manage these emotions.

Transmedia storytelling is an innovative form of storytelling that allows a broad and flexible interrelation between authors and recipients.

Put most simply, a transmedia narrative is one or more related stories across two or more types of media. Many other definitions exist (von Stackelberg & Eira Jones, 2014) but we will keep this definition as open as possible. A broad definition will, of course, run the risk of allowing things in that might possibly upset the finely balanced discussion we will now start upon, but we trust our readers to indulge us by not rocking the boat any more than is interesting.

There are many forms of transmedia narrative currently being used. A comic book and a series of webisodes, feeding into one another, is a simple form. A feature film and interactive website is another. A particularly robust example of a transmedia story or set of stories could span and connect a comic book, a series of webisodes, a feature film, an interactive website, an ebook, and a live action immersive performance. As a collection of websites emerges, the transmedia grows voices and allows other forms of discussion.

It is perhaps useful to know some of the things that we do not regard as transmedia. Transmedia is not sequels or adaptations of books to film. Such carrying on does not seem to investigate the possibilities of a multiplicity of media views into the narrative.

A key part of transmedia story design is 'worldbuilding'. Worldbuilding is the process of creating a storyworld or 'universe' within which all your stories exist. This includes characters, settings, significant objects, and events. Storyworlds are critically important to the development of transmedia projects. Storyworld development begins with the world and multiple stories emerge from it.

The creation of a storyworld is the point at which we join with futures practices. A scenario can be seen as a storyworld. The world is perhaps thinly constructed, based upon an analysis of megatrends and personal interests, technological developments or whatever else has led to the scenario. The conversion of a scenario to a storyworld, or the creation of a storyworld within a scenario, is the primary design goal.

Where has the World of Transmedia Storytelling Emerged from?

Separate from methods of futures thinking, but knocking at its door asking to be let in to play, is the toolkit of transmedia storytelling—a practice which offers the possibility of revolutionizing the ways in which we create shared, richly visual, and interactive narratives about futures.

Media and fan community scholar Henry Jenkins (2006) defines transmedia storytelling as the following:

...a new aesthetic that has emerged in response to media convergence, one that places new demands on consumers and depends on the active participation of knowledge communities. Transmedia storytelling is the art of world making. To fully experience any fictional world, consumers must assume the role of hunters and gatherers, chasing down bits of the story across media channels, comparing notes with each other via online discussion groups, and collaborating to ensure that everyone who invests time and effort will come away with a richer entertainment experience.

The origins of transmedia storytelling can be attributed to a number of simultaneous developments in Hollywood entertainment, Madison Avenue marketing, art and design, and technological innovation. These diverse starting points, and the even more diverse communities of practitioners within each of them, have led to the emergence

of several schools of practice that use the label of transmedia storytelling to describe their process and its output. In spite of their differences, such as contrasting focuses on original entertainment versus corporate brand extension, and social innovation versus technological proof of concept, these schools are increasingly hybridizing and sharing more and more of their DNA.

Similar to how a process of interdisciplinary fusion in methods and perspectives has led to a crisis of identity and a landscape of new opportunity for futures thinking, this hybridization and exchange of politics in transmedia storytelling is creating turbulence and uncertainty. This response is typical of an era of ferment in the life cycle of an innovative approach such as transmedia storytelling, one characterized by turmoil and rapid evolution leading to the establishment of a dominant design before a period of further growth.

What Does Transmedia Unlock for Futures?

This section provides a high-level introduction to what we perceive to be the challenges facing futures practitioners today and what opportunities for improving the effectiveness of the field might be drawn from design and storytelling. These are some of the notions we will be spreading around the following chapters, nicely wrapped up as a teaser for fun and future reference.

The methods widely used in strategic foresight and futures work for the past 50 years have often emphasized the collection, analysis, and

presentation of data and information for the creation of a singular or limited portfolio of future scenarios. Data and information can be valuable when it comes to tracking and understanding social, technological, environmental, economic and political trends and driving forces, but they don't necessarily help people engage the real meaning of critical issues for communities, countries and the planet.

Rather than providing stakeholders with data and information, the goal of futurists should be to use these only as raw materials and re-focus on the development of knowledge and wisdom, moving people's engagement that drives the emergence of personal wisdom. That said, helping people internalize knowledge and personal wisdom around a topic requires new approaches to engagement, with a strong emphasis on context, conversation, experience, storytelling, integration and interpretation.

Without this active focus on context and experience, futurists will have a more difficult time transforming the data sets and reports they produce into opportunities for meaningful insight and action. Two of the more well respected approaches for establishing meaning, knowledge, and wisdom are Experience Design and Story.

- Experience Design: an approach popularized by Nathan Shedroff of the California College of the Arts that emphasizes the design of events, environments, and engagements with a focus across diverse parameters of user experience and cultural relevance.
- Story: a common and important aspect of most cultures that encompasses an account of events, characters, and conflict.

INTERMEZZO: TRANSCULTURE AND FUTURECULTURE

What happens to predictive practices when big data and astrology collide? Artificial intelligence and alchemy? Foresight research and an ayahuasca ceremony? Can an attempt at transcultural understanding and comparison help us become reflexively aware of some of the implicit approaches and assumptions of our own cultural (including disciplinary, social, economic, etc.) backgrounds - bearing in mind that such a comparative approach itself emerges from specific cultural traditions? Can it help to critique, broaden, extend and transform our own tools and practices? At the least, can transcultural comparative perspectives (across time as well as space) lead to a more nuanced and multifaceted understanding of such peculiar notions as the "expert" versus the "person on the street" (etc.)?

INTERMEZZO: TRANSCULTURE AND FUTURECULTURE

CHOOSE YOUR HAT!

What are the various roles people can play in transmedia stories and in futures? In the simplest view, a single author creates a story which a single recipient "reads" in whatever way is appropriate. As we move into transmedia storytelling, design futures and experience design, however, it's a bit more complicated than that. Nonauthors take on all sorts of roles. In this chapter we would briefly like to look at some of the roles that a nonauthor can assume. In an upcoming chapter we take a closer look at the roles an author assumes.

When "we" create a transmedia narrative or experience the relationship between author and the "other" (or nonauthor) rapidly become quite complex. The complexity of the authorship roles will be treated later in detail as we investigate design methods and tools. In order to design, we need an idea about what roles we are designing for. The recipient never was a pure spectator or audience, but let us think briefly about what these words and the resulting recipient role might entail.

The *spectator* is intrinsically connected to the role of the eye, a visual observation of something. According to a dictionary, a person who looks on or watches; onlooker, observer. Derived from the Latin expression for looking at. Related is the term *spectacle*, to describe things that can only be looked at, often awe inspiring displays of power, coordination and organisation. Fireworks, military parades or marching band tattoos come to mind as examples. Guy Debord's *So-*

ciety of the Spectacle (1967) refers explicitly to precisely this lack on involvement of many citizens in society as a result of precisely this aspect of a spectacle that is beyond our lowly powers to comprehend or influence.

The *audience* is a similarly disempowered recipient, reduced to the faculty of hearing, of an audio media. In a royal court, to be offered an audience was to be offered the chance to be listened to, to reverse the usual complete power imbalance. The audience for a message is the powerless recipient of a spoken message.

This leaves us with a strong distaste for using these terms to describe the recipient in a transmedia storytelling experience. Not only are they not having the experience reduced to a purely visual or acoustic media, but they are, in general, disempowered. The recipient in a transmedia experience is usually active, at least in selecting where to turn their attention, but often to a much larger degree. However there are other words and their various meanings, innuendos and allied meanings are worth being aware of.

A *recipient* is a linguistic / narratology term for the receiver of a language message. This term seems most neutral, yet overly scientific. It also ignores and negates a feedback loop of exchange, the recipient being locked into a receiver mode. This term might be usefully used in discussing messages or certain smaller blocks of story, where a feedback cycle is not relevant. We will also continue to use it as a most general form of nonauthor for this chapter, barring the emergence of a better term.

The *user* of a system is a term taken from Human Computer Interaction (HCI) design and is similarly disempowering. For transmedia narratives that are presented through mobile devices and other technological systems, the use of the word *user* to describe the recipient when interacting with the surface possibilities of the technological system seems somewhat more appropriate but becomes strained when the user hops from, for example, an interactive app to a purely text-based e-book, where the term *reader* then may be more appropriate.

When a person enters a space, one can refer to them as a *visitor*. This term indicates that they have been welcomed into an environment within which they are not the owner and creator of the space, but they do have many more "rights" than an audience member. This act of invitation, whether explicitly or implicitly announced, forms the basis for a different relationship and allows a stronger freedom of actions.

In this sense, we might speak of the *explorer* of a storyworld. Given that the storyworld requires an investigative interaction, the explorer helps us think of a person finding parts of the storyworld and merging them, internally as well as through discussions with other explorers, into a slowly growing understanding of the storyworld. The explorer term also includes an aspect of scientific, or at least protoscientific, effort. Exploring can also lead to surprises, for the explorer as well as for the authors. The term *researcher* might also be used similarly, from the French expression for a seeker, or the German *Entdecker*, which means not only explorer but also uncoverer. *Explorer*

has a more romantic touch, with pith helmets in transmedia satisfying some internal urge for absurdity.

This playfulness is carried on by the term *player*, used in Alternate Reality Games, Geocaching and other game oriented forms. A player is expecting, often, a rule set of some sort, within which to play the game. However player also includes the non-goal-oriented form of play (Kane, 2004) with freeform playful exploration in and with a (story)world. In this second form of player, the play aspect includes a larger degree of action from the player, as they make up rules, change the roles of objects and co-create this world.

Thus the term *participant* is often used to include this form of co-creation. In a prehearsal, the participant contributes massively to the story, playing out themselves in the designed scenario. The participant has a strong form of authorship and integration, they are responsible for their experience and the experience of others in the prehearsed storyworld.

This list of words to describe the potential roles that a non-author can play in a transmedia narrative is by no means complete. However, it serves to illustrate the point that the non-author's role is complex and multi-faceted. Transmedia story designer must be aware of this complexity and ensure that the term(s) used to describe the non-author's role does not skew or constrain the relationship with the author.

CHOOSE YOUR HAT!

ROUGH KNIVES AND NEEDLEWORK

Practice, practice, practice

Sollbruchstelle

Experience design tools

Foresight tools

Intermezzo: Travails of the tortured dandy

Worldbuilding tools

Intermezzo: Serendipitous flavour pairings

Engagement tools

CHOOSE YOUR HAT!

PRACTICE, PRACTICE, PRACTICE

The entries in this section are designed to convey, in the most straightforward way possible, working definitions and key examples of six contemporary strategies for the exploration of possible futures. These six practices and accompanying case studies are intended as a (non-exhaustive) survey of the leading-edge futures field. They are not by any means mutually exclusive: on the contrary, the strength of these practices is precisely their open and integrative approach. In some sense all of the examples below are "guerrilla"; all are "experiential". But the terms employed here, while somewhat porous and overlapping, can be used as a practical guide to understanding a very broad and diverse field.

1. Guerrilla Futures: *The Winning Formula* and *The New York Times special edition*

Winning Formula is a speculative work with an engaging perspective on a probable near future: specifically, in the near future of football. It looks like any regular newspaper sports section - called *Today* - with its regular column-based pieces, articles and reviews on the top clubs, players and matches on the league. On closer reading we might find there is something odd with some of the headlines, for example "The Molecular Football™ Algorithm Automatically Produces Snapshots of Systems and Micro-Tactics".

This is because *Today* is - ironically - dated April 2018 and all the information is based on the complex combination of real time feed, database and algorithms we have come to call Big Data. The projection serves as a predictive analysis of an approach that is already changing the industry, with its live performance of feed data from players and the display of statistical projections on the field.

A precedent of this format - if not entirely of the concept - was *The New York Times special edition*, a 14-page knock-off of the Grey Lady that appeared in November 2008. It was dated July 4, 2009 and the front page headline was: "IRAQ WAR ENDS". Instead of "All the News That's Fit to Print" (the usual *Times* motto), the Yes Men's edition carried all the news Americans wanted to read nine months into the future: universal health care, the banning of corporate lobbying, a maximum wage for CEOs, etc.

The New York Times special edition was a collaboration between Steve Lambert and Andy Bichlbaum of The Yes Men, along with 30 writers, 50 advisors, around 1000 volunteer distributors and multiple activist organizations like CODEPINK, May First/People Link, Evil Twin, Improv Everywhere, Not An Alternative, and Cultures of Resistance.

Winning Formula is a project by Fabien Girardin and his Near Future Laboratory in close collaboration with fellow futurists Scott Smith and Philippe Cargov, Barcelona design studio Bestiario, and the R+D team at multimedia communications group Mediapro.

<http://winningformula.nearfuturelaboratory.com/>

<http://theyesmen.org/hijinks/newyorktimes>

2. Design Fiction: *HappyLife* and *Futurematic*

Design fiction may be roughly defined as a merging of traditional design practices and a more speculative exploration of potential (i.e. fictional, which is not to say impossible or even improbable, but so far unrealized) futures. For example, the designers Anthony Dunne and Fiona Raby, who teach Design Interactions at the Royal College of Art in London, have been influential in encouraging a critical view of present technologies and possible futures using design fiction as a hands-on means of provoking discussion.

Two of their former students at the RCA, James Auger and Jimmy Loizeau, have created design fiction or "speculative design" artefacts

such as their 2010 work *Happylife*, which borrowed from existing technology on passive profiling techniques (e.g. thermal flow used in border control) to imagine in tangible form a domestic display capable of mediating, and eventually predicting, the moods or emotional states of the inhabitants of a family home. In other words, a person in the house would be able to look at the display and see how the other family members were feeling at any given moment. *Happylife* is an example of a design fiction artefact that imagines a possible near future while raising questions such as: When does technology become too invasive?

A more recent example is *Futurematic*, created in a "speculative design jam" held in March 2014 at OCAD University in Toronto. The objective of the event, which was a joint presentation by the Situation Lab and the Extrapolation Factory, was to fill a vending machine with artefacts from the future. Participants were called on to "conceptualize and execute" object designs, including packaging and basic prototyping. The resulting "pieces of possible tomorrows" were put on display the following month in downtown Toronto, and included design fiction artefacts such as the *Medi Boop*, a "nipple-mounted early breast cancer detection device", and a "DIY ecosystem replication kit" from the Congo.

A third recent design fiction artefact from Situation Lab – designed in this case with a more specific audience in mind – was Trevor Haldenby and Stuart Candy's (mock?) academic paper, "The Age of Imagination: A History of Experiential Futures 2006-2031". Like *Happylife* and other artefacts developed at the RCA, the objects in *Future-*

matic were designed to investigate and interrogate possible futures – not only what we might encounter in our near future and how near-future technologies might be used, but the more existential question of why we might want such artefacts in our lives and what they might mean to us in our everyday lives.

<http://www.auger-loizeau.com/index.php?id=23>

<http://extrapolationfactory.wordpress.com/2014/04/11/futurematic-with-situation-lab/>

3. Experiential Futures / Prehearsals: *The Flotilla* and *The Hawaii Blue Line Project*

The *Futurematic* vending machine actually extends beyond design fiction artefacts, embodied in the objects it dispenses to consumers, to embrace the wider realm of experiential futures. The "experiential future" in that case would be the total experience of serendipitously encountering (in downtown Toronto) and interacting with the *Futurematic* vending machine in your future everyday life. Other groups take this experiential dimension even further, designing immersive experiences of possible futures, or what Brussels-based collective FoAM terms "prehearsals".

The Flotilla is one example of a FoAM preearisal: a scenario that unfolded in December 2012 as part of an exercise in "future preparedness". It focussed on the central question: How do we work together

on interesting things? For the scenario, participants were asked to "get into character", leaving behind their usual identities, assuming a specific role with a new name and abilities, and immersing themselves in the world of the Flotilla. In the scenario description, "*The Flotilla* is a distributed, semi-nomadic troupe sharing a collective vision of the world and their place in it."

In this scenario, the world has become increasingly hostile to artists, and one guild, the Resilients, decide to "lift anchor" and escape. Some of them are tied together by physical proximity, "floating on the rising seas", others drift far apart physically though are still connected via intermittent electron mists. In the prehearsal itself (held on 12/12/12) the Resilients celebrate Anti-Apocalypse Day, deciding to "come together on the main culture ship and share the stories, materials and skills they have acquired during their voyages in faraway lands". There are readings, hackfests, tastings, and other collective activities, all of which are documented in various ways: a survival guide, a ship's log, etc.

Yet another example of an experiential future is *The Hawaii Blue Line Project* (2008), one of several interventions described in Stuart Candy's *The Futures of Everyday Life*. The project, held as a community event by the Hawaii chapter of the Sierra Club, was intended to raise awareness about climate change using a simple exercise: a blue line was drawn through the streets of Honolulu to demarcate or "fore-trace" the projected sea level at the end of the 21st century. The tactic was also performed by other activists in other cities, including Seattle, San Francisco, Santa Barbara, New York, and Bristol, UK.

http://lib.fo.am/resilients/the_flotilla

<http://www.bluelineproject.org>

4. Physical Narrative: *Stored in a Bank Vault and 20 Seconds into the Future*

Physical narrative may be defined as "a theatre without actors where the spectator becomes a visitor to the space and explores the environment in order to discover the narrative embedded with it". It is closely related to alternate reality narratives, brought together for example in the pan-European research project PARN (with partners Time's Up, Blast Theory, Lighthouse, and FoAM).

One example of a physical narrative is an installation by the Austrian media lab Time's Up entitled *Stored in a Bank Vault*. The installation, which ran for a week in September 2011 as part of the Brighton Digital Festival, is set in a cellar that – it soon becomes clear – is presently being used as a bank robbers' den. Although the criminals are temporarily absent, they may be as close as the next room: the table is strewn with plans for the heist; there are books and letters, photographs, and other paraphernalia.

The walk-through story unfolds according to the boldness of the audience: the more they investigate, pick things over, sift through the evidence, the more of the story they discover. Questions are raised as

the story goes deeper and deeper, potentially revealing "the interconnectedness of the global financial system with everything else".

In *20 Seconds into the Future*, another example of a physical narrative by Time's Up (2010), the protagonist is again strangely absent. This time the story is set in the workplace of a mathematician, and several possible stories may be uncovered by the audience according to their interests: his personal history, for example, or mathematical games he was engaged in, or the philosophical ideas behind his work. All of these parallel stories are revealed through artefacts, sound and visual media, and the environment of the room as a whole. There is no guide and no protagonist; the audience must gather and interpret meaning in the same way people gather meaning in their everyday lives: by reading the signs.

<http://www.timesup.org/stored-bank-vault>

<http://www.timesup.org/content/20-seconds-future>

5. Alternate Reality Narratives: *ByoLogyc*

It all began in March 2012, at the ByoLogyc 20th Anniversary party at the Ingram Gallery on Avenue Road in Toronto. The world's most successful "lifestyle biotech" company used the occasion to proudly introduce ByoRenew, a "supercharger for your immune system" that keeps you from getting sick or growing old. Unfortunately, the formula produces a lethal virus called BRX, and things quickly spin out of control in the first synthetic virus pandemic.

Despite the media interest, it is unclear how it happened, though it seems to be the result of an attack by an Anonymous-like anti-ByoLogyc terrorist group called EXE. In their website, these disrupters claim that "some of the world's most preeminent scientists have sounded the alarm on the risks of synthetic biotechnology. The world doesn't listen, because the world shuns intelligence. We will make them listen." Their Twitter accounts alerts of various actions against the company. They keep repeating: *You've been warned.*

To contain the outbreak as quietly as possible, ByoLogyc establishes the Sanitation and Containment Division and the Public Health and Community Wellness Clinic, where citizens can be treated with an early stage vaccine. When it all fails and after the scandalous dismissal of the VP of Quality Assurance, Olive Swift; ByoLogyc announces a new phase: the ByoRetreat refugee camp. "A deadly outbreak is ravaging the streets of Toronto. Mass panic is imminent. But ByoLogyc is here to help. Buy a ticket, and retreat to their exclusive safe house."

These events unfolded over eight months, and they were closely followed across a variety of platforms, from press releases to characters' Twitter accounts to the disquieting interviews given by ByoLogyc's CEO Chet Getram, who showed more amusement than terror. This is because there was no outbreak or even a company to start with. It was all a "live interactive performative narrative" by The Mission Business, an adventure lab from the Toronto possible futures scene whose mission is "to create connected live-action and online experiences to thrill you, challenge you, and make you think".

ZED.TO: ByoLogyc was a project by The Mission Business; founded by David Fono, Martha Haldenby, Trevor Haldenby, Byron Laviolette and Elenna Mosoff.

<http://zed.to/>

6. Transmedia Storytelling / Worldbuilding: *Volta*

The worldbuilding process is a key aspect of turning *Volta*, a project by the Colombian company Autobotika, from a script for an 80-minute 3D animated feature film into a fully realized transmedia narrative. *Volta* is a story set in the year 2115 that focuses on the relationships and challenges of a family in a heavily polluted technology-driven world dominated by a massive corporation with a monopoly on the supply of energy.

The initial script was for a traditional family-oriented film. It provided an interesting cast of characters, a solid plot line, and intriguing locations. However, from a transmedia perspective it was severely constrained as a single standalone story that the producer was having trouble extending.

Applying a series of techniques from transmedia worldbuilding provided a framework for addressing many of the challenges faced by the producer. The story from the initial script was used as the starting point for the development of a rich storyworld. The worldbuilding was an iterative process that involved several rounds of brainstorming and discussion focused on identifying and refining key elements that were noted on a timeline of the storyworld.

Upon completion of the storyworld it was possible to rapidly identify several potential new stories that could be developed further. The comprehensive timeline and associated discussion notes were retained as documentation that will be used in the creation of an extensive *Volta* "storyworld bible".

<http://autobotika.com/portfolio/volta>

PRACTICE, PRACTICE, PRACTICE

SOLLBRUCHSTELLE

Starting with a rough knife, we have sliced the field of processes into three large chunks, that correspond with the phases or mindsets of design and development only from a particular vantage point. Within these chunks, we look at some design principles that appear to be of value. Note that these techniques and methods are but a small selection. The team at FoAM is currently (as of 2014) developing a more extensive collection of a broader spectrum of techniques at a practical level of detail, under the working title *The Futurists' Field-guide*. For now, we introduce anecdotal evidence of the usefulness of the methods we look at in the form of development narratives. We look at how a particular design principle or question was applied to a small part of the process for a given narrative, taken mostly from the examples outlined in the previous chapter.

We firmly believe that the most important aspects of the process of development is to keep the process playful, irreverent and iterative without losing its effectiveness. The process of development should take advantage of the power of exploration and empirical knowledge gained through practice and experiment in exactly the same way that the process of experiencing futures speculations should be.

One of the easiest ways to extract methods from the ivory towers of both foresight and transmedia storytelling and make them accessible to non-experts and mass audiences alike is to treat them less like symphonies that must be performed exactly as written, and

more like pop songs ready for a good mash-up. When two songs are mashed up with each other, new vocal and musical properties emerge that may not have been obvious or creatively accentuated in the original, and new rhythms seem to surface in the space between the notes.

The mash-up has a long tradition both inside and outside of the realm of music, montage, collage and notably through the literary cut-up technique of William Burroughs and Brion Gysin that resulted in some of the former writer's most notable works. More recently, cutting together open-source video clips resulted in RIP! A Remix Manifesto, a documentary produced by the National Film Board of Canada to demonstrate the changing nature of copyright laws in the 21st century. While traditional mash-ups rely on media like literary texts, music, and cinema, we'd like to propose an introductory approach to mashing up and remixing theoretical frameworks and practical methods from both strategic foresight and transmedia storytelling that can yield new insights, techniques and practice.

Oftentimes in strategic foresight, the scenario planning process commences with the lengthy and expertise-driven assembly of collections of data points, trends representing the movements of aggregate clusters of data in time, and drivers which represent underlying and slow-moving dramatic changes in the social, economic, and environmental landscape.

The method remix approach proposed above shortcuts this process with an emphasis on an intuitive formation early on in the foresight

process of a story core that blends creatively generated elements of a scenario with a social or environmental situation. While many traditional foresight practitioners might suggest that this approach (in contrast to the gradual development of a complex and data-driven future world from which individual scenarios are eventually harvested) is a hasty shortcut, we propose that by remixing the order of operations in the scenario planning process, new creative possibilities might be easily surfaced that yield unexpected fruit.

The three chunks into which we have chosen to divide the process of imagining a diversity of future worlds correspond roughly to the building of a) a futurist scenario, b) a storyworld and c) engagement with the public. These slices are along lines that suggest themselves for cutting, but they do not mark divisions of labour or time. The decisions made in each chunk influence the other chunks. The design principles that we refer to come from a wide variety of sources.

Scenarios are a schematic of a world, an outline of sorts. The process of developing scenarios is one of the core processes of futurist practice: a formulation of possibilities of how the world may be; either at a large scale, or from the context of a person, community, or object. The details of these scenarios can be informed by a diversity of futures, ethnography, and design research processes. The filling-in of these scenarios, to create something that can be more easily recognised as a possible world, is the process of worldbuilding. This process might involve the development of histories that have led to that scenario: histories of politics, social development, climatic upheaval and even family sagas.

These histories, from the global to the personal, should inform and thicken the world, rendering it as packed with rich and believable situations. Within this storyworld, we find the grand narratives of history as well as the very personal narratives of our main characters. From this storyworld, the third aspect of design is to move outside of the narrative realm into the design of audience or participant engagement — to move from a concentration upon the world to a concentration on the people that will interact with the storyworld.

These three chunks of building are not meant to be sequenced linearly. Worldbuilding is a central component to all of this but doesn't mean you are forced to begin with the creation of the storyworld. You can begin anywhere - with a scenario, story, character, setting or other element of the storyworld - and build outward from there to create a rich storyworld. Conversely, you can begin with the development of the storyworld and then identify scenarios, stories, and other elements that emerge from the world that has been created.

The order in which you do this is flexible. You can begin with what be considered a top-down approach that creates the storyworld first or a bottom-up approach in which scenario or story comes first. Either way, the process of creating the story world and all of its elements is an iterative process involving multiple rounds of brainstorming, discussion, reflection, and modification. What is important is not where you begin the process but that you end it with one or more scenarios or stories set in a richly detailed storyworld.

Fan fiction shows us that the expansion from a single story into a whole world is not only possible but common. The core starting spark of a storyworld might be a single scene that leaps, fully fledged, into the mind of an author, to function as the spark for a whole world in which that scene could take place. On the other hand a huge volume of fan fiction has been prompted by a rich storyworld providing opportunities for individual fans to develop their own stories within the context of a larger world.

If we wish to define our core practice as developing transmedia stories to investigate future scenarios, there may be situations in which the linear ordering can make sense, others where less fixed trajectories are required. Just as a remix or mashup of two songs sets much of the beauty of either original song in a new and provocative hybrid context, a remix or mashup of scenario planning methods could not only make the methods less restricted in terms of application and more fruitful in terms of yield, it could make the creative exploration of methods previously thought to only be the domain of experts attractive to non-experts, artists, designers, or transmedia storytellers. These stakeholder communities have a tremendous amount of value to gain by merging their process with those of researchers and innovators concerned with new breeds of stories and scenarios about the future.

SOLLBRUCHSTELLE

EXPERIENCE DESIGN TOOLS

There is a spectrum of generally relevant design principles, from which a few have been selected that relate well to the design work often associated with new breeds of transmedia and futures practice. This collection is populated by crossovers, repetitions and even a few contradictions, but this contradiction does not indicate that any idea in particular is wrong. They are guidelines. Guidelines ask questions about things, inspire interactions between outside models of how a world, a system, or a society can be. So don't expect consistency.

Know that these methods and frameworks have been found to be useful by the people in the room at Data Ecologies 2014 and the book sprint that followed, and that sometimes combining and remixing methods can illuminate valuable perspectives on what problem you are trying to solve in the first place.

Calvino

In *Six Memos for the Next Millenium*, the journalist and author Italo Calvino explores six principles of value in literature (here quoted and paraphrased), which can be adapted for use as flexible heuristics in storytelling and futures:

- Lightness → lighten, remove weight, enliven
- Quickness → jump from one subject to another, lose the thread a hundred times and find it again after a hundred more twists and turns
- Exactitude → clear, incisive, memorable, as precise as possible
- Visibility → bring visions into focus
- Multiplicity → weave together the various branches of knowledge, the various “codes” into a manifold and multifaceted vision of the world
- Consistency

Before he died on his way to Cambridge to deliver a lecture about the memos, Calvino had finished preparing the first five. We can assume, by the consistency of titles among them, that consistency would have fit in itself as the sixth principle.

Pretotyping

The field of pretotyping was proposed by Alberto Savoia in 2009 and has been revised since then as it has been applied. It is intended as a formulation of a desire to prototype by feeling rather than function. The buzzphrase describing the practice might be “Make sure you are building the right *it* before you build it *right*”, and is meant to encompass a strong focus on experience in the very early stages of a design process. The manifesto states:

- innovators beat ideas
- pretotypes beat productypes

- **building** beats talking
- **simplicity** beats features
- **now** beats later
- **commitment** beats committees
- **data** beats opinions

- *don't finish what you've started*
- *failure is an option*
- *scarcity bring clarity*
- *the more the messier*
- *reinvent the wheel*
- *play with fire*

Experience design is a messy affair. It involves pretending that the thing that you have in your hand might be a functional piece of advanced technology, even if in reality it is a block of wood with some text marks indicating a screen and buttons. Only once this barrier is passed, and you can begin to imagine that the thing that you are sketching would be useful and relevant, do you bother working out an actual design prototype.

Interaction Vocabulary

The Interaction Vocabulary was developed by the research group led by Marc Hassenzahl at Folkwang University. This collection of vocabulary pairs is intended to allow industrial design practitioners to position the experiences at the core of a physical product on a continuum between two relative extremes. By looking at such questions of balance and extremity, the designer is empowered to find the relevant combinations of elements in their particular situation.

- Instant - Delayed
- Diverging - Uniform
- Incidental - Targeted
- Approximate - Precise
- Constant - Inconstant (Variable)
- Slow - Fast
- Apparent - Covered
- Mediated - Direct
- Stepwise (Discrete) - Fluent (Continuous)
- Gentle - Powerful
- Spatial Proximity - Spatial Separation

It is probably the case that situations that meet a balance point between any two pairs are not to be evaluated using this approach. Situations and product stories are to be analysed in terms of the cards when they lean towards one extreme or another.

System design principles (*Antifragility*, Taleb)

In order to develop systems that are antifragile - that is, resilient in a very specific way - Nassim Nicholas Taleb, the Lebanese-American essayist and author of *The Black Swan*, has proposed a few principles.

1. Stick to simple rules
2. Decentralize
3. Develop layered systems
4. Build in redundancy and overcompensation
5. Resist the urge to suppress randomness
6. Ensure everyone has “skin in the game”
7. Give higher status to practitioners rather than theoreticians

These turn out to be useful guides to thinking about complex systems in real space, and how they are recognized, designed, and optimized.

Iterative Design

The idea of designing from a blank sheet is widely regarded as a sign of either genius or madness. In much the same way that prototyping talks about getting the behaviour of something thought out before you start prototyping it, iterative design and its close ally, agile design, regard the idea of big and sudden leaps in form and function to be dangerous, risky, and fraught with uncertainty.

Some design projects are worked on in a linear fashion - begun at their "natural" beginning and continued through to a finished product - while others emerge after numerous cycles of feedback through an interactive design process. Futures and transmedia projects tend to emerge through iterative design processes, which prioritize feedback from human or information systems, and allow for flexibility during design while both increasing and decreasing the risk of the project losing its focus, missing deadlines, or budget overruns. There are several key points that will help keep a project on track while still giving the flexibility that can come from an iterative approach. These principles may prove helpful:

1. Set an overall goal - The goal should articulate the overall scope of the project, including a concise but general description of what it will deliver, when it will deliver it, and what the budget is. At this stage many of the details should yet to have been defined.
2. Set interim phases - The overall project should be divided into a series of phases that will, upon their completion, enable staged movement towards an overall goal. Specific deliverables for each of the interim phases should be identified. Think of each phase as the fence in between the posts. When you reach a new post, expect to reassess your goals and deliverables for the next stretch of work.
3. Identify detailed requirements for individual phases - A detailed set of requirements should be developed to each phase. These requirements will serve as the definition of what that particular phase will deliver. Involve stakeholders in the identification of detailed requirements. Requirements can be developed sequentially once phase at a time or in parallel.

4. Develop deliverables - The deliverables for each phase can be developed either sequentially or in parallel. The approach used is determined by a variety of factors including resource availability, overall project deadlines, and whether the deliverable from one phase is required before the next phase can begin.
5. Test deliverables - The testing process looks not just for problems but additional features that need to be added in a later phase.
6. Modify deliverables - Essential modifications are made.
7. Roll out deliverables - The deliverable is rolled out for use in the real world.
8. Repeat - Gather feedback from users of the previous stage's deliverables, and let the cycle begin anew.

The Experience Timeline

Eva Lenz spoke in her presentation at Data Ecologies 2014 about finding inspiring principles for interaction design in a night out. Based upon the banal and everyday experience of taking in a musical performance with close friends, she presented an elegant abstraction of the night's activities in the form of a three-part reflection on the nature of relational experience design. Here is the three stage process that Eva introduced:

- **Warm up. Pre-event. Anticipation.** The process of working up to something. A film has a trailer, and a back story; a book has the blurbs on the cover and the quotes indicating why we might want to read it. And a concert experience often starts with a meeting of

friends at the bar beforehand, social anticipation of which songs will make up the event.

- **The Event.** As a relational experience, all friends would be present in the same area of a concert hall, but will all be facing forward, not to one another. This phase of the experience is all about the core time of the reception.
- **Cool down period. Post-experience.** The possibility to discuss with friends or others about the experience. Reflection, comparison, working out what just happened.

This gives us an idea about what additional needs may be considered and designed beyond the parameters that support a product's explicit use. The experience of the concert on its own, for example, on its own may or may not be nearly as satisfying as the experience of the concert bracketed by socialization and relaxation on either side. The addition of the two bracket experiences on either side of the concert (or the use of any product or service) contextualizes the experience and makes it more meaningful.

Two examples surfaced at Data Ecologies 2014 of how this idea of bracketing a design experience with warm up and cool down periods.

The warm up phase was designed into the ZED.TO: ByoLogyc performances, where waiting in a queue filled with aggressive protestors and security guards shouting messages through megaphones outside of the immunization clinic was consciously designed as an extension and warm-up to the experience occurring inside.

A cool-down experience was incorporated into Time's Up BodySPIN and Sensory Circus installations, where a bar / café environment was created as a place for visitors to linger as they departed the installation environment. The bar offered coffee and alcoholic drinks, a place to sit, and most importantly, a live feed from CCTV cameras within the installation space, and data representations of actions unfolding within the space. The objective of the cool down experience was to allow visitors to reflect upon what they had just participated in, to compare their experiences, and because they had not actually exited the space, the allow a smooth re-entry into the space if desired.

This approach to bracketing the central attraction of an interactive experience with warm-up and cool-down experiences has been utilized in museum design, but most efforts are little more than works in progress, or are controversially out of place - most notably highlighted in the controversy surrounding the 9/11 Museum and Memorial's awkwardly designed Gift Shop in New York City. (Lanks, 2014)

FORESIGHT TOOLS

A broad array of tools, models, and methods are used by futurists to identify, analyze and anticipate change and (ideally) develop strategies to deal with those changes. While it is difficult to get a precise count of the number of "official" futures tools, models, and methods (as new ones keep popping up and existing ones renamed and re-purposed), surveys of the field over the past several decades have identified dozens. The Millennium Project's report on Futures Research Methodologies (Version 3.0) (<http://www.millennium-project.org/millennium/FRM-V3.html>) lists more than 30. Shaping Tomorrow (<http://www.shapingtomorrow.com/media-centre/pf-cho3.pdf>), a foresight organization with an extensive website of futures-oriented information, identifies more than 100 tools, models and methods that can be applied to futures research.

In this chapter we will sketch out a few of the classes of tools in order to give insight into how they are being, and might be, used. In particular, we are interested in lightweight tools that can be learnt easily, require minimal hardware, and are quickly and easily deployable. The goal of introducing these methods is that non-experts could easily conduct in a scenario session of their own with not much more than pen, paper, a bit of time and a burning question. Through such approaches, barriers to the exploration and ownership of the futures can be lowered.

At the fringes of futures and design disciplines, new research and creation practices are emerging that focus on the materialization of the speculative through advances in storytelling that go beyond what is often incorporated into a future scenario. These practices, including design fiction, tangible futures, experiential futures, and pervasive transmedia scenarios, seem to have been inspired as much by experimental work in the domains of experience design and transmedia storytelling as by traditional futures practice. Jonathan Resnick's major research project from OCAD University's Strategic Foresight and Innovation program provides an excellent comparative overview of these emerging practices: http://dl.dropboxusercontent.com/u/12436123/resnick_jonathan_mrp2011.pdf

When a non-expert peeks behind the curtain of strategic foresight, it's likely to be an overwhelming experience. The sheer amount of terminology and tools described in hundreds of research papers and journals is daunting for someone who isn't seeking to start a PhD in the field. Luckily, some of the futurists have written papers and made models to attempt to create higher-level categorizations that can function as on-ramps for the futures enthusiasts. However, there are also a myriad of models and frameworks made from different perspectives as well. We selected two frameworks to give a taste of what techniques might be available: The World Futures Studies Federation (WFSF) five approaches and Rafael Popper's Foresight Diamond.

The WFSF suggests that futures tools can be classified as belonging to one or more of five approaches:

- the *empirical approach* which focuses on trend analysis and

prediction

- the *critical approach*, growing out of a critique of what was perceived as an overly empirical approach to futures and emphasizes an understanding of social practices as fragile, particular, and not as universal categories of thought
- the *cultural approach* arose from efforts to include non-Western cultures and to invoke a deeper consideration of civilisational and planetary futures
- the *empowerment-oriented approach*, which uses a prospective, action research approach
- the *integral/transdisciplinary approach*, newly emerging and appearing to have potential for authentic multiperspectival and planetary inclusion

(Source: WFSF - <http://wfsf.merlot.org/studies/>)

Rafael Popper, a research fellow at the University of Manchester, has extensively explored the use of different futures methods, ranking their popularity and positioning them in his "foresight diamond" model:



Foresight Diamond, Popper (2008)

- **Creativity-based** methods normally require a mixture of original and imaginative thinking, often provided by technology “gurus”, via genius forecasting, backcasting or essays. These methods rely heavily on (a) the inventiveness and ingenuity of very skilled individuals, such as science fiction writers, or (b) the inspiration which emerges from groups of people involved in brainstorming or wildcard sessions. As Albert Einstein once stated: “The only real valuable thing is intuition ... Imagination is more important than knowledge. Knowledge is limited. Imagination encircles the world” (Einstein as noted by Viereck, 1929).
- **Expertise-based** methods rely on the skill and knowledge of individuals in a particular area or subject. These methods are frequently used to support top-down decisions, provide advice and make recommendations. Common examples are expert panels and Delphi, but methods like roadmapping, relevance trees, logic charts, morphological analysis, key technologies and SMIC are essentially based on expertise. A warning note about expertise is sounded by Arthur C. Clarke (1962, p. 14): “If an elderly but distinguished scientist says that something is possible, he is almost certainly right, but if he says that it is impossible, he is very probably wrong”.
- **Interaction-based** methods feature in foresight for at least two reasons – one is that expertise often gains considerably from being brought together and challenged to articulate with other expertise (and indeed with the views of non-expert stakeholders); the other is that foresight activities are taking place in societies where democratic ideals are widespread, and legitimacy involves “bottom-up”, participatory and inclusive activities, not just reliance on

evidence and experts (which are liable to be used selectively!). Scenario workshops, voting and polling are among the most widely used methods here; of course these often require some sort of expertise to apply the method and inform the interactions. Other methods like citizen panels and stakeholder analysis are becoming popular because of their potential contribution to further networking activities. But it is not always easy to encourage participation and the anonymous saying accurately states that “the world is ruled by those who show up”.

- **Evidence-based** methods attempt to explain and/or forecast a particular phenomenon with the support of reliable documentation and means of analysis. These activities are particularly helpful for understanding the actual state of development of the research issue. For this reason, quantitative methods (e.g. benchmarking, bibliometrics, data mining and indicators work) have become popular given that they are supported by statistical data or other types of indicator. They are fundamental tools for technology and impact assessment and scanning activities (see Porter *et al.*, 1980). These methods can also be employed to stimulate creativity (sometimes by challenging received wisdom). And while supporting workshops, evidence-based information is quite useful to encourage interaction and getting feedback from participants. A word of warning here for both practitioners and users may be the well-known quote attributed to Benjamin Disraeli by Mark Twain (1924): “There are three kinds of lies: lies, damned lies, and statistics” – which basically points out that sometimes statistics are used to mislead the public.

(Source: Popper, R. (2008) *Foresight Methodology*, in Georghiou, L., Cassingena, J., Keenan, M., Miles, I. and Popper, R. (eds.), *The Handbook of Technology Foresight*, Edward Elgar, Cheltenham, pp. 44-88.)

A concrete example

Scenario planning or scenario building is one of the most commonly used futures methods. All scenario methods include mapping out the present situation and identifying the driving forces that influence change. From this information, through a range of techniques, a series of possible future scenarios - short backstories describing a future world - are created. For more information about the different scenario methods, you can visit the the Future Fabulators wiki, where FoAM is collating a growing collection of approaches: http://lib.foam/future_fabulators/scenario_methods

One traditional approach for producing scenarios is introduced by foresight practitioner Kees van der Heijden (formerly of Shell) in his book *Scenarios: The Art of Strategic Conversation* (2005), elaborating on processes developed by Peter Schwartz of Royal Dutch Shell and Global Business Network. Trevor Haldenby of OCAD University followed this approach closely for *Where In The Future*, a scenario planning project completed in 2011 that explored changes in mobile technology and locative media, out of a partnership between OCAD University and a future-facing game developer from the private sector.

Here is a high-level view on how the scenario planning process unfolded:

Sensemaking: The futurist and game developer met and began mapping out the current operations of the developer's business, particularly when it came to plans for the design and development of a location-sensitive mobile game project. Methods used included cognitive task analysis, business model canvassing, and competitive gap analysis.

Scanning and Trends: The futurist defined a set of data points and connected ideas that might represent problems and opportunities for the developer as his business reorganized around this new game project. The database contained signals (individual data points - i.e. Apple's new iPhone containing an environmental sensor sells five million units on its first day), trends (clusters of signals that point towards broader change in a particular social, technological, or environmental domains - i.e. developers are increasingly making use of the sensors built into popular smartphones to create new genres of games), and drivers (big, slow-moving forces of change in the world - i.e. the internet has in the past 50 years gone from an inaccessible scientific project to an accessible consumer service, or even human right).

Critical Uncertainties: Out of all the signals, trends, and drivers explored, the futurist decided which two were most significant but least certain in terms of how they might continue

to influence the game developer's business, and the project under consideration. In this case, those turned out to be:

- **Standardization or Diversification of Platforms:** will diversification or standardization of mobile platforms become the industry norm?
- **Player Appetite for Risk:** whether location-based game players would be increasingly risk-averse or risk-eager in their behaviour.

2x2 Scenario Matrix: The futurist used one of the most popular methods of generating scenarios from critical uncertainties (though one arguably ready for retirement). The two critical uncertainties pushed to their extremes, and mapped to the horizontal and vertical axes of a four-quadrant matrix.

Scenario Writing: The futurist contrasted each extreme extension of each critical uncertainty against each other — applied some of the storyworld design techniques described elsewhere in this chapter to create four written stories about a world where mobile platforms are diversified but player attitudes tend towards risk-aversion, where platforms are standardized but players remain risk-averse, where mobile platforms are diversified but players are risk-eager, and finally where platforms are standardized and players are risk-eager. It takes a good storyteller to quickly adapt the 2x2 matrix into a compelling story, which emphasizes how important but often under-represented qualities of imagination and creativity are in foresight practice. The information gathered during

the sensemaking, scanning, and trends process is used to create stories of four different worlds where the changes at play in the world today are taken to their extremes, and rendered richly in the context of four possible game players from the future.

Implications: The futurist presented his stories of the future to the game developer, which enabled an informal and creative conversation about how the world might change, and whether or not his business was ready to adapt to each of these four different possible futures. This led to a more formal process of examining forecasts for the operation of the developer's business, as well as his plans for the development of his new game project, against what was contained in the scenarios. Was his business set up to succeed in all of the scenarios, or just some of them? Was his game idea destined for failure in one of the scenario worlds, or even in all of them? How might he adjust his plans in order to manage uncertainty and create the best product for customers of the future?

While this high-level introduction to the classic 2x2 matrix scenario planning process leaves out plenty of detail, it does illustrate how in spite of the process utilizing research and storytelling, it doesn't provide as much opportunity as it could to make the scenarios and their implications meaningful to the game developer. This could have something to do with the futurist taking on the majority of the creative tasks, such as deciding on the critical uncertainties and fleshing out the scenarios. The project involved a more creative approach

to the process than is often taken in business futures practice, but it still focused more on data and information than on knowledge, and wisdom. Full documentation of the project, including all of the scenarios that were created, is available online: <http://research.ocadu.ca/gameplay/project/where-in-the-future>

In Future Fabulators, FoAM and AltArt have designed a series of scenario building sessions, ranging from one individual (a recovering biotechnologist) to a Flemish network for culture in transition, and a range of interdisciplinary groups brought together around specific future oriented topics. Documentation of the processes and scenarios can be found on: http://lib.fo.am/future_fabulators/scenarios

Futures and Storytelling

While the use of storytelling techniques in the futures field goes back several decades, it is only very recently that storytelling has become a significant subject of discussion around futures methodologies. Scenario planning methods often have at their core an emphasis on formal elements associated with storytelling, but their primary purpose is often to paint a dry and distanced picture of the world, either from a bird's eye view or a personal perspective, not to engage readers in a compelling literary experience. The scenario planning method remains utilized more often than not in the diffusion and communication of completed futures research projects, and do little through their content or design to engage readers through conversation, active experience, and rich context. However, they can be used as raw material in creation of storyworlds for diverse transmedia experiences and experiential futures.

Karl Schroeder, the Canadian futurist and science fiction author, has explored the ways in which science fiction storytellers and communicators of foresight projects can learn from one another in his major research project at OCAD University, *Safety Glass* [<http://www.mendeley.com/download/public/651111/4541835975/b31a7012a9021394a5201d8c36ff62148ebafad5/dl.pdf>]. Intel's futurist Brian David Johnson has developed a process called *Science Fiction Prototyping* [[http://scifiscience.co.uk/articles/Sci-Fi%20Prototypes_IEO9_BD\).pdf](http://scifiscience.co.uk/articles/Sci-Fi%20Prototypes_IEO9_BD).pdf)] that emphasizes world building, plot and action paired with real-world scientific and human inflection points connected to emerging technology platforms. Johnson's *Tomorrow Pro-*

ject [<http://www.tomorrow-projects.com>] also gathers science fiction authors for collaborations on written and multimedia anthologies that occasionally involve collaboration with technological futurists within large corporations. In their *Prehearsal Pocket Guide* [http://lib.fo.am/resilients/prehearsal_pocket_guide], FoAM outlined a step-by-step guide to creating scenarios and adapting them through various design practices into immersive, visual, and participatory experiences. This guide is an excellent starting point for beginning to make thinking about the future an activity that is a social and experiential activity, rather than an individual and intellectual one.

INTERMEZZO: TRAVAILS OF THE TORTURED DANDY

Oh Woe! Words, words, words... My brain is a butchered — Blow-torched! — Marshmallow; swallowed by the Monstrous Discarnate Pufferfish lurking in the deeps of Attersee; Horrendous eddies! Gelatine oozes from my ears and nose with the pathos of a Shakespearean tragedy... Oh! the Pain; Oh! the horror! The Kopfschmerz — nay, dear reader! — the veritable Weltschmerz! — that burns and overwhelms my Cardboard Cutout Soul! It is so extremely Prodigious that my Top Hat Tumbles from off my poor head; I can barely ward off the Weight of the Heavens with my cane — so Etiolated and pale have I become; from staring into the Infinite (Ecto)plasma of Pixels; I gaze through the window; ——— a metaphor of Arcane Notation; flickering in the mists like Appalling Hallucinatory Jellybeans! Suffer me, oh Gentle, patient, enduring Reader — to declare: I am Sick from my Heart unto to my Socks!

INTERMEZZO: TRAVAILS OF THE TORTURED DANDY

WORLDBUILDING TOOLS

Worldbuilding can emerge from both bottom-up and top-down processes. The bottom-up approach to worldbuilding, as a simplification, involves expanding a scenario or story into a storyworld, adding all sorts of elements to expand an abstraction into a plausibility. Using a top-down approach involves developing details of the storyworld first and then seeing how stories, situations and characters emerge from it.

We identify two main collections of elements that make up a storyworld: the large scale history of that world and the smaller scale history of the characters, settings, and significant objects that interest us in that world.

While some traditional approaches to worldbuilding and futures thinking suggest that the expansion of a scenario into



a storyworld (or vice versa) should proceed in a specific order, the playful remixing of methods and creative reinterpretation of their use is encouraged. Whether you start with a storyworld, or start with a back-of-the-cocktail napkin sketch of a cool idea for a scenario doesn't really matter. Different methods suggest different paths to-

wards the creation of a compelling story and experience, but ultimately, that outcome matters more than how practitioners arrive at it.

By remixing and reordering the approaches to worldbuilding contained in this section, the barriers to entry for creative thinking about the future are lowered. The lower the perceived barriers, the more access is granted to non-experts, artists, and designers to learn about these exciting methods through experimentation and open-ended play, rather than through rigorous pursuit of and adherence to domain-specific expertise.

The narrative setting

The setting is the stage upon which the narrative unfolds. It goes far beyond the physical characteristics of a place. One model is a three way reduction of a world to *topos*, *demos* and *chronos*. *Topos* and *demos* help structure the way the storyworld is, *chronos* explains how we got there.

Topos is the physical characteristics of the world, the way that the world has changed, developed, evolved from now, or the point of departure into a parallel present or future. In general we will not change the physical laws that exist in the storyworld, i.e. faster-than-light travel or magic, unless these are of special interest. One strong factor are climatic and environmental changes, such as climate change and the resulting effects. Climate zones moving might lead to changes in

flora and fauna, geography might change with sealevel changes, ice melts, recovery of high meadows from beneath glaciers etc. Changes in built infrastructure, i.e. roads, buildings, etc. will also be included here, as a result of climatic change, population changes, resource allocations, etc.

With *Volta* -a transmedia project by the Colombian company Autobotika you can read about in depth in the *Case Studies* section- the initial script included a small number of settings; the home and workplaces of the main characters, a brief glimpse of the city in which they live, and a rural area that becomes an important element driving the plot. In developing the storyworld further the initial script was used as a starting point from which to provide much more comprehensive details on not just the settings identified in the script, but other settings that might be unseen by the audience but which are relevant in some way to what is happening in the story. As more details of the topos of the storyworld were developed, it became clearer what drove changes in the physical environment over a long period of storyworld time and how the various locations related to each other. A richer topos presented opportunities for new stories and increasing the richness of existing stories.

Demos refers to the inhabitants, their society, culture and technology. This will include ethnic, racial, and species groups, changes in food, clothing and languages. On a larger scale, there will be development of social structures like family structures, political and economic systems and institutions, law enforcement, the military and the entertainment systems. Soft structures such as beliefs, norms and values

might have shifted, symbols and myths will have evolved. Last but not least, the whole development of technological systems will impinge.

Borrowed Scenery (also in the Case Studies) developed a world in which plants were sentient, and science had developed along lines more recognisable as Thalience» than Reductionism. Plants, People and Places alike became characters in the storyworld, able to establish lines of communication with participants who chose to enter the story. This kind of speculative invocation of alternate intelligences does not, at first glance, appear to fall explicitly within the normal bounds of futures studies, but provides a mix of situated real world experiments with speculative fictions in order to explore our attitudes towards sentience, the environment and the nature of human relationships with the non-human other.

Chronos is the "official" and unofficial history of the storyworld, from now until then. This can be developed in a multitude of ways, as an objective listing of events, the construction of mythology in the future scenario or a mixture of both. Storyworlds can benefit from distinctions between the two, with remnants from our world being misinterpreted in the future storyworld.

Topos is allied to the environmental trends of some futurist practises, *demos* with the political, economic, social and technological trends. As you lay out these various elements on the timeline, the framework for your storyworld begins to emerge. You are able to quickly

see different characters, settings, significant objects, and events both individually and in relation to each other.

From a futures studies perspective in particular, it is important to have the stories individually and the storyworld as a whole provide the audience with an understanding of the path of change and the reasons for that path. One strong desire is for an audience to see some of the implications of current trajectories transferred down into everyday life. Prehearsals in particular expect that a participant build the subjective personal path from the present into the rehearsed storyworld, in order to explore the implications and possibilities of choices that they are making now and may make in the future in response to changes in the high level storyworld scenario.

Calvino's *Six Memos* are probably of importance here, in developing storyworlds with exactitude and multiplicity, creating a world that is consistent enough and not overwhelmed with too much detail, allowing a memorable and clear vision of the storyworld. Multiplicity encourages the designers to create worlds that are not just of interest to people with a select and slim area of interest, rather it has a selection of branches of knowledge that encode a multifaceted vision of the storyworld.

Designing the narrative

The *narrative design* phase focuses on the design of the story elements of the transmedia narrative. This includes character, plot, and all the other things that go into creating the story.

Some suggestions for narrative design

It may be important to select a genre, as this will define similar settings, content and subject matter, themes, plots, central narrative events, styles, structures, recurring icons, situations, and characters for all stories within that storyworld. It will also define the expectations of your audience and will have a significant role in defining who your audience will be.

One approach is to develop a "grand narrative" for the storyworld. Identify the premise, an audience-centric single-sentence "hook" that is a teaser for the storyworld, such as "How will you survive in a world that has become more dangerous?" Identify the controlling idea, one sentence that describes how and why things have changed from one state of existence at the beginning to another at the end. Example: "Our world has been destroyed because we failed to heed the danger signs."

It may be possible to identify a designing principle, one sentence that expresses the idea around which the storyworld is synthesized, which should provide the overall logic and strategy for the stories within the storyworld. This may be as confrontational as: "Force individual audience members to confront the consequences of failing to act." Many narratives evolve from a central conflict, "Who fights whom over

what?" In a climate fiction, this might be "Those seeking to halt climate change are in a struggle with those who seek short-term gain while our futures hang in the balance."

These four tenets – premise, controlling idea, designing principle, and central conflict – keep the storyworld together and make individual stories recognizable as part of the same storyworld. Within a storyworld, each story should have its own premise, controlling idea, designing principle, and central conflict, but they are all connected to their corresponding storyworld-level element. The self-similarity here can assist in the creation of coherence.

The storyworld timeframe can be defined, quite possibly lasting from now until the date of the scenario. The character's personal story within that timeframe might be very short, but may well include important elements of the larger timeframe, in order to underline and explore the "how we get there from here" question. This story will involve a sequence of external events, initiated by the characters or forced upon them, as well as internal events as they respond to change.

Many storyworlds revolve around significant objects that influence and inform the narrative. Whether it be the *McCuffin* that remains unknown as the narrative revolves around it, or the core object around which desires and almost character-like properties emerge, these objects take on important roles. In physical narrative, in particular, the entire storyworld is communicated through the objects and their properties. There might be core significant objects or there

might be an even distribution of character and storyworld representation over the entire collection of objects in the piece. A distinction can be made between plot significant objects and character significant objects.

Physical narratives are systems of objects that transmit the story. The messy collection of pharmaceuticals in Jamie's desk drawer in *Stored in a Bank Vault* had no plot purpose, but demonstrated a strong element of his depressive, neurotic character. The chat screen on one of his monitors, on the other hand, introduced plot aspects of character conflict and intrigue. The construction of the storyworld in a physical narrative follows the decentralized, layered, redundant systems that Taleb's design principles suggest. The ability of the visitor to the physical narrative space to skip at will from one element to another embodies Calvino's memo of "Quickness", encouraging the visitor to flit from one element to another as their interest and focus requires it.

INTERMEZZO: SERENDIPITOUS FLAVOUR PAIRINGS

The sleeping baby screams. An uncannily musical scream, a transmogrified toccata and fugue in Z major. An olympian overture, if you like. It wakes a mismatched menagerie of gods and goddesses. A sequence of transmogrifications on the theme of juniper twigs: the dextrous structure of wine and panic, flavour pairing between the fruits of desire and unreal radiations; a tragicomic waltz of genetic mutations. The Big Question here will always be: "What game do we play when all identities melt and fuse?" (Hoffenhübsch) Paradigmatitis: Lila, Shakti, Dionysius, Pan, Shiva... gods, force fields, projections, introjections? We don't care. All we know is the ἔκστασις of the sequence. लीला, *lila*, serious play, the most serious of all the universe. (Cf. the Many-Hatted Hydra: an entity that juggles serendipity and déjà vu like hot potatoes.) Where does serendipity sit in the spectrum between chance and necessity?

INTERMEZZO: SERENDIPITOUS FLAVOUR PAIRINGS

ENGAGEMENT TOOLS

Whatever we do in transmedia, without an audience there is no experience. One recurring question that will inform any author's work is that of identifying who the audience is. Without knowing and expressing who we imagine will engage with our stories, it will be difficult to plan an engagement strategy.

We are always aiming for a stronger integration of an audience's feelings with the storyworld that we have created. We desire to engage them deeply with the story. Transmedia storytelling allows us to add elements and interactive experiences that immerse the audience more deeply; allowing, encouraging, and perhaps even demanding higher levels of engagement. In this section we will look at some of the ideas involved. Audience engagement design focuses on crafting aspects of the transmedia narrative that primarily involve users' participation.

Henry Jenkins (Jenkins, 2006) describes works as seeking to be fulfilling certain roles.

- **Attractors**, pull people in, perhaps causing alliances along interest lines
- **Activators**, give audiences something to do (i.e. some activity, game, role, goal, mystery to solve, or other form of meaningful participation)
- **Expression**, the work provides the materials and infrastructure that allow fans to recombine elements of the storyworld to generate new

forms of expression.

One view regards these three roles as corresponding approximately to the three phase experience design model that Eva Lenz offers of anticipation / warm up, event, and reflection / cool down.

These various roles that a work can play reflect different aspects of a recipient's involvement in a transmedia narrative. Initially, cultural attractors draw the recipient into the storyworld, attract their attention, and encourage a confrontation and development of involvement. We will discuss this below in terms of *on-ramps* and *rabbit holes*, our points of access to the storyworld. The activator role of a work encourages action outside the direct realm of the medium, encouraging action that is somehow tangential to the confines of the storyworld. A mystery to be solved, an object to be found taped to the underside of a coffeshop table - these elements still exist within the authored confines of the storyworld. Once the participant crosses another line and begins to co-create within the storyworld, however, the third role is reached. In fan fiction, this role is central; the core. A prehearsal integrates the creation and experience of the storyworld allowing the "expression of the work" to be as much as possible in the hands of the participants (http://lib.fo.am/future_fabulators/prehearsing_the_future)

On on-ramps and rabbit holes

Alternate Reality Games have often used the term 'rabbit hole' to describe the way by which players enter the gameworld. The name comes from the rabbit hole that Alice crawls into in Lewis Carroll's *Alice in Wonderland*. In the story, Alice's curiosity drives her to follow a white rabbit into its hole, whereupon she lands in Wonderland. The technique is commonly applied in ARGs to excite or arouse interest in an uncanny placement of an avenue - often a URL. By following the URL, a player - who often does not yet realise he or she is falling into the Alternate Reality - enters into a carefully designed online environment or other Alternate Reality. While the easiest technique is a URL in an unusual place, other examples include telephone answering machine systems (*The Beast*) and parties (*ByoLogyc*).

This opening of a door from the actual to the fictional world encourages an open investigation, as this feels like the discovery of something new and magical. It is, of course, fraught with issues of consent. There is no sign proclaiming that those who cross a given line are moving into a fictional alternate reality. TINAG was a catchphrase, This Is Not A Game, a position that has lost some standing over the past decade. Hoaxing the audience is regarded as inappropriate; it has become more acceptable to admit that the situation is, if not a game, then at least a form of theatre and definitely fictional. The slippery slope of the rabbit hole has been, in many cases, replaced by the well signposted on-ramp.

At launch, the ByoLogyc website bore no identification of its situation within the transmedia story world of an ARG, but very early on a small “ZED.TO” disclaimer box was added to the site’s footer, making it possible for players to quickly move from an engagement within the story world to an exploration of the project at a meta level. No such graphic disclaimer was present on many of the online channels through which the story unfolded — Twitter accounts, online videos, and the project’s graphic novel were all contextualized solely within the ByoLogyc story. Analysis of the trade-offs involved in this design decision, and an exploration of how the ByoLogyc story website [www.byologyc.com] performed against sites associated with the project at a meta level [www.zed.to] are contained within Trevor Haldenby’s research project from OCAD University, *Bringing the Future to Life*. For a wider context of ARGs, FoAM worked with the game developers Six To Start to compile a historical overview of the genre, which can be found on http://lib.fo.am/parn/alternate_reality_games_tutorial (2013).

Another important issue is the suspension of disbelief, or rather the active “investment of belief, where an experience seems real to an audience because they are making an active investment of their minds, bodies, and spirits.” (Wirth, 1994) While this might be achieved through a borderless crossing of the line between consensual reality and the fictional world of a transmedia narrative, it can easily become a hoax and is often met with a feeling of ethical inappropriateness. By allowing a border to be consciously crossed, the visitor is encouraged to consciously engage with and invest belief in the situation. Rather than being surprised by mismatched edges in the alter-

nate reality, she has willingly put on the rose-tinted glasses of engaged and suspended disbelief and will interpret signs in the way that best fits a given scenario.

In an environment where involvement is desirable, the process of allowing and encouraging access to the details of the storyworld becomes important. Whether by an unannounced rabbit hole or via a well signposted on-ramp, the visitor is in the world which they choose to explore. How do we allow further entry points into deeper levels of story? One technique that we have observed is the introduction of multiple entry points - elements in a space that allow various interests to be engaged and then allow access to other parts of the storyworld. These could be seen as various rabbit holes into the same warren, or on-ramps to the same network of highways, allowing access to the complete storyworld network.

On-ramps and rabbit holes represent alternatives to more classical and singular entry or beginning points to stories: for instance, the first chapter of a book, the opening sequence of a film, the rising curtain in the theatre. Transmedia storytelling, with its non-linear narratives featuring many ways into the story, can make use of all of these techniques, although the core of a transmedia narrative (or its "tent-pole"), may offer a single preferred point of entry.

Needs and gratifications

It may be the case that you have a desired audience action, more than simply the grabbing of their attention. When attempting to design for participation, one must take into account what the user wants from the work. One avenue, often used in experience design is to investigate various models of human needs, to then adjust the designs match those needs and desires (regardless of the user is aware of them or not). It has been claimed that Apple has perfected the process of creating new desires or wants into which it inserts its design objects and systems that can satisfy those wants. However, several studies indicate that the wants might be analysable in terms of human needs.

Eva Lenz uses a framework of seven needs, which she discussed in her talk at Data Ecologies 2014. This framework grew out of a study (Hassenzahl et al, 2010) from Maslow's (1943) hierarchy of needs:

- Competence (Can I be good at this?)
- Relatedness (The feeling of being involved in and related to the people around oneself)
- Popularity (What one does has an effect on other people)
- Stimulation (Novelty)
- Security
- Meaning
- Autonomy

Based on this framework the researchers involved have developed *Need Cards*. This in turn has led to an alternative design ap-

proach that overturns or challenges a number of standard design processes. The Need Cards can be used to pose questions during a design process, aiming to develop an industrial design practice that is created bottom up, starting from a desired experience, rather than top down - starting from predefined technology or functionality. Functionality should be guided by a need and not vice versa. It's about designing the intangible side of things. Lenz is interested in experiences of shared consumption and experience of products. "Experience design is not about technology that feels good, but about stories it endows people through its material form."

Another helpful framework to understand user gratification comes from Denis McQuail (1983). He says that for most media use falls into six broad categories:

- Information seeking
- Aesthetic experience
- Monetary compensation
- Entertainment
- Personal identity
- Social integration and interaction

While users often seek more than one type of gratification, it is important that the author of the transmedia narrative picks a primary gratification that the narrative will address and keeps any others as secondary. Attempting to satisfy two equally dominant gratifications is very likely to result in mixed priorities with neither of the gratifications being adequately satisfied. A more effective approach is to select a primary and a secondary gratification. An example of this ap-

proach is *The Daily Show with Jon Stewart*, a political satire that uses a television news format. The primary gratification *The Daily Show* satisfies is entertainment through comedy, with the secondary gratification being information about politics and current affairs. If there is a conflict between these two gratifications, comedy wins every time and information takes the backseat.

Questions of Agency

One important way to engage the public is to allow them to have an effect on the piece, to have agency. One fundamental premise of gaming is that the agency implicit in games is one of the reasons for the immersive quality of gaming experience, the ludic moment and all its relatives. While a body of work questions the connections between gameplay and narrative moments, there remains an interest in finding balances between them. Agency is an equally important factor in other contemporary media experiences whether social media or location-based experiences like geocaching.

One framework for thinking about agency in interactive narrative experiences looks at the different user roles in a storyworld (Ryan 2001 and Harrell & Zhu, 2009). Based upon these roles, questions can be posed as to how these roles are being satisfied in a given situation.

- *User Story Role*: First person or third person.
- *Agency Relationship*: How tightly the user and narrative system actions are linked. If the agency relationship is low, an action by a user will not cause a response by the system, while a tightly linked

agency relationship means that a user action will cause an appropriate and proportional response by the system.

- *Agency Scope*: The impact of a user action on the narrative world, from local (i.e. navigating an avatar) to global (i.e. taking an action that determines the direction the narrative takes).
- *Agency Immediacy*: How quickly a response to a user action occurs, from an immediate response to a considerable delay.
- *Agency Duration*: How long the impact of a user action lasts, from short-term (e.g. killing a character that is regenerated a few seconds later) to permanent (e.g. permanently eliminating a key character) within the narrative or storyworld.
- *User Input Direction*: The degree of *user input direction* is determined by how much control the user has over the narrative's *dynamic agency*.

While it may be tempting to design a transmedia narrative so that users can play the role of a major character, research has shown that the audience response to that approach is generally negative. A study of the British television series *Spooks* and its associated transmedia gaming elements found that fans of the series did not want to step into the roles of the fictional characters seen on television (Evans, 2008). Dena also notes that allowing game players take the roles of a limited number of major characters in a narrative is impractical if a multiplayer roleplaying game is part of the storyworld (Dena, 2009, pp. 208-209). A better strategy is to create classes of characters that allow potential transmedia game players to roleplay a member of a certain class of players (Dena, 2009, pp. 208-209). For example, players might take on the role of a hobbit or dwarf from *Lord of the Rings* or a 'field agent' in a game based on the *Spooks* program.

The narrative structure of *ByoLogyc* was so built as to allow a strong form of player agency in certain scenes, but with back-up plans and other contingencies to ensure that the narrative returned to the planned next state. This gave the illusion of agency without having to explicitly include provisions for massively branching narrative networks. The number of players in the experience made it possible to include a variety of localised branching elements that would only be seen by a small percentage of the players. Nevertheless, all parts of the storyworld and narrative network were experienced, none of it was in vain.

As a form of experiential futures entirely based on improvisation, prehearsals rely extensively upon a strong form of player / participant agency. As a format it is still in its experimental phase, so we have no bullet-point frameworks, but rather some informal observations. The prehearsal format is the place of practitioners rather than theoreticians and is intrinsically open to randomness. Taleb's system design principles discussed in a previous chapter are eminently applicable here, especially when it comes to the lack of suppression of randomness, simple rules and decentralized systems. From a range of prehearsals and experience prototypes developed at FoAM since 2011, we observed that involving the participants in the creation of the possible future scenarios increases their sense of agency, responsibility and enjoyment of the experience. This kind of involvement also tends to have much longer and deeper effects in the participants' daily life (in the form of behavioural changes, influencing decision-making, lifestyle adaptations, etc.).

In some prehearsals, the participants were involved in the whole process, from the creation of scenarios and their translation into experiences, to imagining how they could become protagonists in the prehearsal, to finally 'prehearsing' and post-experience reflection. In these experiences the agency and sense of ownership of the experience were strong for most people involved. In other situations, when the scenario was designed by a small team and the prehearsal included a larger group of participants, issues of blurry edges arose. Boundaries between reality and fiction, mundane actions and scenario-driven situations, present day character-traits and prehearsed personalities tended to be more unclear and confusing. During the reflection of the *Flotilla* prehearsal it was concluded that when the story is out of the hands of the participants themselves, stricter rules are needed and more traditional roles, like the "puppet-master" in an ARG should be clearly defined. On the other hand, if the participants themselves designed the story, a much more emergent interaction was possible. This observation mirrors the motivations to "own the future" described in the everyday futures and politics chapters of this book - when someone else designs the future, we expect someone else to control the experience, but if we create the future ourselves, we take responsibility for its unfolding.

Messages and effects

Each event, object and system in a transmedia narrative has embedded messages and effects. These effects on the audience form a basis of engagement with the piece. The use of some frameworks for breaking down the effects of a message, or the construction of messages in order to achieve certain effects, can be of value.

If the desire is to transmit a message to an audience, it is vital to specifically identify the message(s). Any message in a transmedia narrative should be closely linked to the storyworld premise, controlling idea, design principle, and central conflict identified earlier in the worldbuilding process. When looking at the message derived from these the transmedia storytellers can ask themselves a number of questions, including:

- What is the intended function/effect of the message?
- Do you want the message to provide new knowledge, provoke strong emotions, change behaviors, or something else?
- Do you have different audiences that you want to reach at different levels?
- How can you use the particular strengths of different media platforms to deliver the message?

W. James Popper identified six types of effects produced by media:

- **Cognitive (intellectual) effect** - impact on a person's mental processes or the product of those mental processes (e.g. the acquisition of factual information)
- **Affective (emotional) effect** - impact on the emotions a person

experiences (e.g. fear, anger, laughter, etc.)

- **Physiological effect** - impact on the automatic bodily responses to stimuli
- **Belief effect** - impact on a person's faith in the truth or reality of something
- **Attitude effect** - impact on a person's judgments about something (e.g. likability, trustworthiness, attractiveness, etc.)
- **Behaviour effect** - impact on a person's overt actions (e.g. purchasing of a product, aggression, etc.)

These six effects provide an important framework for planning how to design an experience or story. Targeting a single effect is the most common design strategy. For example, a non-fiction website focuses on the information it wants its audience to know (Cognitive effect). A telenovela focuses on targeting the audience's emotions (Affective effect). Provoking a physical response is the primary purpose of roller coasters and most other amusement park rides (Physiological effect). A rousing sermon in a church is primarily about affecting the audience's spiritual beliefs (Belief effect). A role playing activity that puts audience members into the shoes of someone else can target attitudes towards others (Attitude effect). A stationary exercise bicycle with an integrated display that shows a representation of the terrain while simultaneously adjusting how hard it is to pedal the bike targets the behavior (physical in this case) of the participant (Behavior effect).

These six effects can be used to analyse phases of a narrative. A given message or event can be analysed along these effects. While waiting

in line, the environment can pass on information for cognitive effects whilst invoking an emotional response. The planning of the *ZED.TO: ByoLogyc* project involved plotting these media effects on a shared timeline in a Google Document to explore the way that emotional affects changed over time, from the simple joy of the initial product release parties to the paranoia of the later phases as the story descended into a collapse scenario.

The ByoLogyc story was designed with these general six domains of media effect in mind.

In order to make a further breakdown of how media functions effect audience participants, one can analyse in terms of the following media functions.

- **Acquiring:** influences a person to obtain something that is not present prior to exposure to the message
- **Triggering:** influences a person by activating something that already exists within that individual
- **Altering:** influences a person to change something that already exists with them
- **Reinforcing:** influences a person to make it more difficult to change something that already exists within them

The online videos in the ByoLogyc alternate reality game were used in a variety of ways to change and reinforce the information, emotional states, beliefs, and behaviors of different categories of participants. For example, video was used to change the emotional state of participants by generating excitement and a sense of "tingly" transforma-

tion while also reinforcing the sense of comfort, safety, and satisfaction associated with ByoLogyc. Social media and online stories were used to reinforce the behavior of participants who had already engaged in the ARG while those who had not engaged in it were encouraged to change through their level of participation by actually ingesting significant objects -- in this case pills -- from the future.

An experience designer or transmedia storyteller might choose to work along this function dimension. For example, if the intent of the work is to affect a diverse audience it might be designed in such a way that it provides new information to some, triggers the memory of information that is already there in some, alters the existing information held by some, and reinforces what some of the audience already knows.

Haldenby and von Stackelberg adapted and simplified these media functions and effects to create a design matrix to aid in rapid concept development for alternative reality games, transmedia narratives, and experiential scenarios. The matrix is intended for brainstorming sessions to encourage conversations and quickly sketch out concepts for content and media platform use. The matrix has two dimensions - the information, emotional state, beliefs, and behaviors held by participant's on one axis and whether the media content and platform was intended to either change or reinforce each of these.

ENGAGEMENT TOOLS

Byologic Online Videos	CHANGE	REINFORCE
INFORMATION	<ul style="list-style-type: none"> • Introduce new significant objects 	<ul style="list-style-type: none"> • The Byologic brand and history
EMOTIONAL STATE	<ul style="list-style-type: none"> • Generate excitement and a sense of tingly transformation 	<ul style="list-style-type: none"> • Support a sense of comfort, safety and satisfaction towards Byologic
BELIEFS	<ul style="list-style-type: none"> • Change beliefs about the company's values • Enhance beliefs about what the company is capable of 	<ul style="list-style-type: none"> • Support belief that the company is from the future
BEHAVIOURS	<ul style="list-style-type: none"> • Encourage participation through "pill-pop" and tickets for events 	<ul style="list-style-type: none"> • Support current participation through social media and online content

Haldenby and von Stackelberg Conundrum

WHAT ELSE IS MISSING?

Inconclusion

A few heuristics

A note (or two) on terminology

References and reading

Disclaimer

ENGAGEMENT TOOLS

INCONCLUSION

Summarising this book is impossible - realising this leaves us with simply setting the text free. We hope that someone finds something valuable in these pages.

Please take this text onwards, upwards, in some other strange direction. We might see follow-up versions, we might recognise the echoes of these ideas somewhere, sometime in some future.

People who were explicitly involved in DE14 and the Book Sprint:

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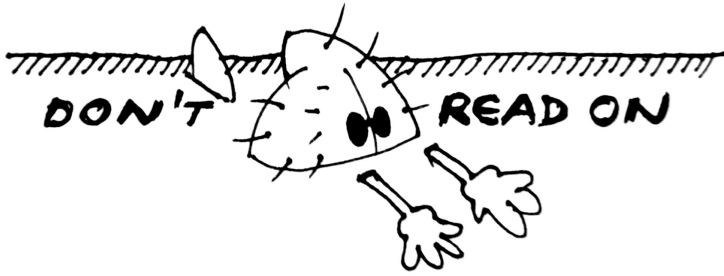
And of course, the Rain.

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INCONCLUSION

A FEW HEURISTICS

We collect, in this chapter near the end, some of the heuristics with which we believe the process of futures speculation can be spiced. These heuristics, lists, guidelines and checklists can be found scattered through the book, with a context that attempts to explain possible usages and applicability. Here we tear them from their context and present them as simple heuristics - numbered but in no particular order or hierarchy.

"Con la pazienza s'acquista scienza." (With patience you go beyond knowledge.)

6.

Six principles from Italo Calvino's *Six Memos for the Next Millennium* which can be adapted for use as flexible heuristics (quoted and paraphrased):

- Lightness → lighten, remove weight, enliven
- Quickness → jump from one subject to another, lose the thread a hundred times and find it again after a hundred more twists and turns
- Exactitude → clear, incisive, memorable, as precise as possible
- Visibility → bring visions into focus
- Multiplicity → weave together the various branches of knowledge, the various “codes” into a manifold and multifaceted vision of the

world

- Consistency

11.

Advice drawn from the conclusion to "Space Operations Officers as Jazz Musicians" (*Army Space Journal*, 2010):

In short, be a team player; create opportunities for others. Educate yourself; broaden your appreciation of the Operating Environment. Practice on real problems; create real solutions. Tolerate mistakes. Act on instinct. Take advice to heart. Focus more on what just happened and less on the future. Play jazz.

4.

Keith Johnstone's four commandments, from *Impro: Improvisation and the Theatre* (2007):

1. Status
2. Spontaneity
3. Narrative Skills
4. Masks and Trance

5.

Guerrilla futures principles from Stuart Candy (2013):

- Don't break the universe
- The tip of the iceberg
- The art of the double-take
- Playfully
- Collectively

7.

Antifragile System Design Principles from Nassim Nicholas Taleb (2012):

1. Stick to simple rules
2. Decentralize
3. Develop layered systems
4. Build in redundancy and overcompensation
5. Resist the urge to suppress randomness
6. Ensure everyone has "skin in the game"
7. Give higher status to practitioners rather than theoreticians

1.

Don't look for Solutions, Look for Questions.

7.

Seven needs from Hassenzahl, Lenz et al. (Other needs structures can be found in (Maslow, 1943) and (Wilson, 1983)):

1. Competence (Can I be good at this?)
2. Relatedness (The feeling of being involved in and related to the people around oneself)
3. Popularity (What one does has an effect on other people)
4. Stimulation (Novelty)
5. Security
6. Meaning
7. Autonomy

12.

Strategies for Antifragility (Taleb, 2012):

1. Pursue barbell approaches
2. Focus on options
3. Be curious
4. Get out of your comfort zone
5. Focus on the edge
6. Conduct lots of experiments and tinker
7. Don't get consumed by data

8. Focus on building/accessing tacit knowledge rather than rationality and explicit knowledge
9. Focus on subtractive knowledge
10. Collaborate and trade
11. Respect the old
12. Beware of wealth, debt and reputation

11.

A few other miscellaneous heuristics:

- "strong positions weekly held" (watch out for hedgehogs and foxes)
- create contingent, temporary certainty
- use "experiential futures" acting out scenarios as a way to develop the capacity to be dynamically uncertain while remaining sufficiently specific
- move with the centre of the cyclone
- embrace antifragility, create optionality (i.e. ways in which you can still benefit when you are "wrong" more than 50% of the time)
- stochastic tinkering
- a series of small experiments, each informing the next
- be strict at points of convergence, increase randomness at points of divergence
- stories are a species of technology: "learn stories, remember jokes"
- learn to play nomic (and practice)
- redundancy is the mother of sea creatures

A FEW HEURISTICS

A NOTE (OR TWO) ON TERMINOLOGY

if you notice the » character it should indicate a phrase can lead you to this page for further explication. There are a range of specific, particular and speculative terms in this book, often used several times with little in the way of explanatory padding. Here are some that may need clarification and/or a careful/creative attention, unpacking and further rumination. please enjoy these notes, further reading and/or short descriptions...

- **Ambient Foresight:** building futures awareness subtly to sustainably manifest it in mental environments (instead of flashy, specular external environments)
- **Antifragility:** "Some things benefit from shocks; they thrive and grow when exposed to volatility, randomness, disorder, and stressors and love adventure, risk, and uncertainty. Yet, in spite of the ubiquity of the phenomenon, there is no word for the exact opposite of fragile. Let us call it antifragile. Antifragility is beyond resilience or robustness. The resilient resists shocks and stays the same; the antifragile gets better" (cf. Taleb)
- **Big Data:** Data that is at least 35m high, more than 7 tonnes heavy or wider than expected.

- **Black Swan:** A term used to describe events that are unforeseeable, often used by those to explain why they are unable to foresee events (see Black Elephant)
- **Black Elephant:** Derived from mixing the term "Black Swan" with the saying "The elephant in the room", which refers to a major issue that is completely obvious with which everyone refuses to address. A "Black Elephant" is obvious, entirely foreseeable event that almost everyone refuses to address and which, when they occur, everyone avoids responsibility for by claiming it was unforeseeable... Not the Arbitrarily Coloured LIDAR Elephant in the Room. Definitely not.
- **Book Sprint:** a collaborative writing event.
- **The Californian Ideology:** "This new faith has emerged from a bizarre fusion of the cultural bohemianism of San Francisco with the hi-tech industries of Silicon Valley...the Californian Ideology promiscuously combines the free-wheeling spirit of the hippies and the entrepreneurial zeal of the yuppies." (cf. Richard Barbrook and Andy Cameron)
- **Contingency:** a possibility or possible outcome, something that may or may not happen in the future, but which can be planned for as one of several or more alternative options.
- **CQWG:** Cross Quadrant Working Group
- **Everyday life experts:** "All" of "us" dealing with our daily surrounding and lifestyles.
- **Experience Design [XD]:** a practice of designing products, processes, services, events, and environments with a focus placed on the quality of the user experience and the cultural relevance of the solutions, popularized by the designer and educator Nathan

Shedroff of CCA.

- **Forward looking statements:** A disclaimer about statements about the future.

Loophole. http://en.wikipedia.org/wiki/Forward_looking_statement

- **Hedgehogs and Foxes:** "Hedgehogs have one grand theory (Marxist, Libertarian, whatever) which they are happy to extend into many domains, relishing its parsimony, and expressing their views with great confidence. Foxes, on the other hand are skeptical about grand theories, diffident in their forecasts, and ready to adjust their ideas based on actual events." (cf. Philip Tetlock)

- **Infinite Monkeys:** (see

https://en.wikipedia.org/wiki/Infinite_monkey_theorem)

- **Maslow's hierarchy of Needs:** (...)

- **MacGuffin:** "a plot device in the form of some goal, desired object, or other motivator that the protagonist pursues, often with little or no narrative explanation. The specific nature of a MacGuffin is typically unimportant to the overall plot."

<https://en.wikipedia.org/wiki/MacGuffin>

- **Prehearsal:** A rehearsal of a future scenario, where improvising participants act out themselves in that scenario.
- **Scenario:** A rich and plausible description of a possible future, with enough narrative and contextual detail to imagine it with possible issues, concerns and challenges.
- **Sollbruchstelle:** An engineering principle that, rather than breaking at random, things are designed to break at a certain point. We use it when looking at a field to refer to the lines along which the field might separate.

- **Thalience:** “So here is the grandest definition of thalience: it is the discipline that chooses among multiple successful scientific models based on which ones best satisfy our human, aesthetic/moral/personal needs. In other words, given two or more equally valid models of the universe, thalience is the art of choosing the one with the most human face. It is the recovery of the natural in our understanding of the Natural.” <http://www.kschroeder.com/my-books/ventus/thalience>
- **Transmedia Storytelling:** One or more related stories across two or more types of media; sometimes referred to as intertextual storytelling, cross-media storytelling, or multimedia storytelling; but distinguished by the creation of stories that spread across media ecologies, emphasize the creation of storyworlds rather than singular narratives, and that may actively engaging audiences as co-creators and curators rather than just consumers.

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Further reading, alluded to or suggested, but not explicitly referenced can be found amongst the notes from FoAM's ongoing research about futures.

- Background Research.

http://libarynth.org/future_fabulators/background

- Integral Futures.

http://libarynth.org/future_fabulators/integral_futures

- Experiential Futures.

http://libarynth.org/future_fabulators/experiential_futures

REFERENCES AND READING

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Safe harbour for forward- and backward-looking statements (or: a masquerade party in the subjunctive mode)

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(When does an empty head become brain-meltdown?)

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