

CONCLUSION

What Is to Be Remembered?

All This, Just for the Whiff of Possibility

Human beings have been treated with suspicion in these pages. Despite my unapologetic optimism about the big picture, I have at times anticipated that our kind will be gullible and vain, or will attempt to cheat and dominate. I have assumed that we will often choose the lazy answer and suffer indignity happily so long as it is glazed with coolness. And yet at the start, I professed love for people, and said the whole project was about how special people are, and how deserving.

There is no contradiction. To love people is not to be infatuated with them. It's hard to perceive us realistically; it is a leap of faith. What will be left after we acknowledge all our failings?

There are many questions left unanswered, as they should be. My space elevator pitch did not specify the proper limits of government in an advanced information economy. Nor did it consider whether there might be national variations in information economies, or if there must be global coherence.

These and many other huge questions cannot be addressed yet. The purpose for now can only be to demonstrate that there is unexplored legitimate possibility. I hope the pitch persuaded you that we are not bound by the conventions of the current mania for deterministic information technology evolution.

My sketch of a possible future will hopefully prod hotshot young computer scientists and economists to prove they can do better, and to present improved designs.

Please do that, but also please stop once per hour and check

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yourself: Are you still keeping people in the center? Is it still all about the people? Are you really avoiding the lazy trapdoor of falling back into thinking of people as components and a central server as being the only point of view for defining efficiency or testing efficacy?

The Economics of the Future Is User Interface Design

As technology gets better, economics will have to become less abstract. Economics used to be about the patterns of results that emerged from rules that influenced human social behavior. It focused on the ways that policy engendered outcomes.

But with every passing year economics must become more and more about the design of the machines that mediate human social behavior. A networked information system guides people in a more direct, detailed, and literal way than does policy. Another way to put it is that economics must turn into a large-scale, systemic version of user interface design.*

Some user interfaces are meant to be deliberately challenging, as is the case for games, while others are meant to make complexity easier. The latter variety powers the bigger industries by far, encompassing consumer devices, professional tools, and business productivity. I have engaged for many years in both idioms. They're both hard!

Making a game enticing and addictive is a balancing act. You need to find just the right quivering back and forth between challenge and reward.† The point is not to make the game as hard to use as possible, but to dangle usability just out of reach.

Games are fun and can be wonderful learning tools, but help-

*Here I am, a computer scientist, seeing the world my way. Economists are invited to respond that computer science ought to start looking more like economics, and they'll receive a friendly reception from at least this computer scientist.

†If you're curious, you can probably find an old psychedelic game of mine, called Moondust, which I wrote when I was about twenty. It runs on Commodore 64 emulators. It was a commercial success and its proceeds funded the first virtual reality systems in a garage in Palo Alto.

ing people achieve things in the real world on more complex terms than before is the endgame of computer science. There's no greater pleasure for a computer scientist than seeing someone become able to do something that had once been impossible, simply because good data with a good user interface clarified the situation. I have seen surgeons understand how to destroy a tumor because of a better computer simulation and display. I have seen patients with learning disabilities become productive. The everyday sight of people able to use their personal devices is as much a pleasure. This is what we live for.

Making complexity easier is the great craft of our era.

The Tease of the Tease

Thus far, the information economy has resembled gaming more than the practical side of user interface design. That's not to say that online economic activity is being made more difficult than it needs to be, but that it engages the human brain in a teasing way.

The human mind is particularly susceptible to engagement by rapid-fire feedback that taunts on the edge of granting treats. ~~Semi-random feedback is a more intense dominator of attention than consistent feedback.~~

Before the arrival of digital computation, pastimes that embodied this pattern of seduction were the obsessions of the global human experience. Sports and gambling provide fine examples.

Computation can offer precisely this kind of feedback all too easily. Watch a child playing games on a tablet and then watch someone keeping up with social media, or trading stocks online. We become obsessively engaged in interactions with approximately, but not fully predictable, results.

The intrinsic challenge of computation—and of economics in the information age—is finding a way to not be overly drawn into dazzlingly designed forms of cognitive waste. The naïve experience of simulation is the opposite of delayed gratification. Competence depends on delayed gratification.

This book has proposed an approach to an information econ-

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omy based more on the craft of usability than on the thrill of gaming, though it doesn't reject that thrill.

Know Your Poison

To paraphrase what Einstein might or might not have said, user interface should be made as easy as possible, but not easier. Dealing with our personal contribution of data to the cloud will sometimes be difficult or annoying in any advanced information economy, but it is the price we will have to pay. We will have to agree to endure challenges if we are to take enough responsibility for ourselves to be free when technology gets really good. There is always a price for every benefit.

When I try to imagine the experience of living in a future humanistic network economy, I imagine frustrations. There will constantly be a little ticker running, and you'll be tempted to maximize the value recorded. For many people, that might become an obsessive game that gets in the way of a more authentic, less prescribed experience of life. It will narrow perspectives and undervalue wisdom. There will be nothing fundamentally new, in that money has always presented exactly that distraction, and yet the temptation could become more comprehensive, thicker in the air.

Information always underrepresents reality. Some of the contributions you make will be unrecognized in economic terms, no matter how sophisticated the technology of economics becomes. This will hurt. And yet by making opportunity more incremental, open, and diverse than it was in the Sirenic era, most people ought to find some way to build up material dignity in the course of their lives.

The spiritual challenge will remain of not losing touch with that core of experience, that little something that doesn't fit into the aspects of reality that can be digitized.

I don't for a moment claim to have proposed a perfect solution. Someone like me, a humanist softie, will complain about the oppressive feeling of having to feed information systems in order to get by.

The only response, which I hope will be remembered should this

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future come about, is that the complaint is legitimate, and yet the alternative was worse. The alternative would have been feeding data into Siren Servers, which lock people in by goading them into free-will-leeching feedback loops so that they become better represented by algorithms.

We are already experiencing designs related to the kind of ticker I dread, except the present versions are much worse. Your Klout* score, for instance, is worse than the micropayments you'd accumulate in a humanistic economy because it's real-time instead of cumulative. You must constantly suck at the teat of social media or your score plummets. Klout dangles a classical seductive feedback loop, almost making sense, but not quite.

In a humanistic information economy, you'd spend your money in ways you choose; under today's system, you are influenced by phantasms like Klout scores in ways you'll never know.¹ Perversely, such a sense of mystery can make a bad design more alluring, not less.

Is There a Test for Whether an Information Economy Is Humanistic?

One good test of whether an economy is humanistic or not is the plausibility of earning the ability to drop out of it for a while without incident or insult.

Wealth and dignity are different from a Klout score. They are states of being, not instant signals. It is the latitude granted by the hysteresis—the staying power—of wealth that translates into practical freedom.

One should be able to earn the latitude to test oneself, and try out different life rules, especially in youth. Can you drop out of social media for six months, just to feel the world differently, and

*Klout is a universal, uninvited ranking service that rates how influential people are, mostly by analyzing social media services like Twitter. Amazingly, Klout scores have influenced hiring. Since I don't use social media, I presumably have a Klout score of zero, which ought to be the superlative status symbol of our times.

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test yourself, in a new way? Can you disengage from a Siren Server for a while and handle the punishing network effects? If you feel you can't, you haven't really engaged fully with the possibilities of who you might be, and what you might make of your life in the world.

People still ask me every day if they should quit Facebook. A year ago it was just a personal choice, but now it has become a choice that comes with a price. The option of not using the services of Siren Servers becomes a trial, like living "off the grid."

It's crucial to experience resisting social pressure at least once in your life. When everyone around you insists that you'll be outcast and left behind unless you conform, you have to experience what it's like to ignore them and chart your own course in order to discover yourself as a person.

It can be doubly tricky because the way people talk about conformity is often as though it were a form of resistance to conformity. It is exactly when others insist that it's a sign of being free, fresh, and radical to do what everybody's doing that you might want to take notice and think for yourself. Don't be surprised if this is really hard to do.

My suggestion is, experiment with yourself. Resign from all the free online services you use for six months to see what happens. You don't need to renounce them forever, make value judgments, or be dramatic. Just be experimental. You will probably learn more about yourself, your friends, the world, and the Internet than you would have if you never performed the experiment.

There will be costs, since the way we do things today is vaguely punitive, but the benefits will almost certainly be worth it.

Back to the Beach

I miss the future. We have such low expectations of it these days. When I was a kid, my generation reasonably expected moon colonies and flying cars by now. Instead, we have entered the big data era; progress has become complicated and slow. Genomics is amazing, but the benefits to medicine don't burst forth like a lightning

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bolt. Instead they grow like a slow crop. The age of silver bullets seems to have retired around the time networking got good and data became big.

And yet, the future hasn't vanished completely. My daughter, who turned six as I finished this book, asks me: "Will I learn to drive, or will cars drive themselves?" In ten years, I imagine, self-driving cars will be familiar, but probably not yet ubiquitous. But it's at least possible that learning to drive will start to feel anachronistic to my daughter and her friends, instead of a beckoning rite of passage. *Driving for her might be like writing in longhand.*

Will she ever wear the same dress twice as an adult? Will she recycle clothes into new objects, or wash them, as we do today? At some point in her life, I suspect laundry will become obsolete.

These are tame speculations. Will she have to contend with the politics of extreme and selective artificial longevity? Will she have to decide whether to let her children play with brain scanners? Will there be crazed mobs that believe the Singularity has occurred?

Say almost anything bold about the future and you will almost certainly sound ridiculous to someone, probably including most people in the future. That's fine. The future should be our theater. It should be fun and wild, and force us to see everything in our present world anew.

My hope for the future is that it will be more radically wonderful, and unendingly so, than we can now imagine, but also that it will unfold in a lucid enough way that people can learn lessons and be willful. Our story should unfold unbroken by perceived singularities or other breaches of continuity. Whatever it is people will become as technology gets very good, they will still be people if these simple qualities hold.