

FEDERATION DREAMING - AN INTERVIEW

By Ross Cevenst BA(Hons)

...And so a rookie 21st-century technology journalist's story on suspended-animation technology turned into a life-changing journey. My two-week nap turned out to be a 89 year slumber, blissfully unaware of the chaos around me. And so here I sit in the year 2123 - in a new world I cannot begin to describe. So, I interviewed someone who can. Xavier Tivear has been around almost as long as I have, and he's been a leader throughout this era that I've missed. Prolific inventor, former chairperson of the UN Energy Commission, and later the Earth Federation's lead economist - who better to describe the path the world took to reach the 22nd century?

As I approach his office in his community's business complex, I pass through a tiny yet striking corridor, decorated with imagery that in many ways symbolises his generation's own journey. On one side, 3D paintings of the harsh trials of the last century. The wars and great food shortages of the 20's and 30's, the environmental destruction that followed, the dark nations of anarchy and of totalitarianism. Yet on the other side - visions of hope. The first off-world colony. The salvation of near-lost species. The birth of the Earth Federation. The great advances of education. The ascendancy of enlightened community over both greed and bureaucracy.

And then I am there, before a grey-haired man, humble, plain-speaking, yet carrying an intellectual intensity that captures the imagination. I start with the easy topics. The recent years of peace and prosperity. Time enough for talk of troubles a little later.

John: Lead economist for the Federation, managing humanity's economy - it must have been quite a job.

Xavier: Well, the treasury doesn't so much manage it as give it the occasional gentle nudge. For the most part our work entailed gathering and publishing data, ensuring the price system operates fairly, reporting on economic and environmental interaction. In terms of actual control, it's limited - just a few economic levers the treasury can pull to ramp up defence spending, environmental protection resources, research and development. In an advanced community economy, we run on the principle that the more power you wield, the more scrutinised your life should be, and the more abstract your powers. And so my powers were very abstract indeed. We believe anything else invites corruption or abuse.

J: So you can't get the treasury to tell the manufacturing sector to double production of your favourite beverage then?

X: Ha! No. Treasury doesn't directly control major industries.

J: How can a complex economy operate without some level of coordination?

X: Control of the economy is primarily through incentives and price signals - environmental damage, social cost, disaster prevention, its all researched, weighted and integrated into the market's economic price signal to produce a true quantification of value. It's a kind of mixed market economy - government is limited, but the community appoints experts to call the shots, not industry or government. Community values and scientific expertise are in control, not an overbearing central authority, and not an amoral profit-loss statement.

J: So social and environmental factors are considered?

X: In a rational way, yes. No-one can deny that in the twenty-first century we came close to the brink of disaster. But with immersive virtual reality we can fulfil our more decadent desires without excessive resource usage, and now we've crossed the bridge into off-planet mega-industry there is little need to use

Earth like a ore pit or trash heap. Sadly there is a lot we can't get back - I wish I could send you back again to recover all those species we lost forever. But now we can weight the impact of our actions, we can price our value of other species, and integrate those values into a complex market economy. We can't change the past, but we can make sure we don't lose anything like that again.

J: But why would a business voluntarily submit to an extra cost?

X: Not all do, but you have to understand that our greatest innovation is the change in how business works. More than half of the economy operates on a model of *community business*. These businesses aren't mindless profit-machines, they're member-owned enterprises who are incentivised based on quality, not quantity, not expansion. The focus is on both on efficiency and morality. The communities can choose to reward individual productivity, but there is also mechanisms to facilitate social activity, recreation, psychological well-being, community health, research and learning - not for profits, but for their own sake. The business is the structure in which the community meets its goals. People overwhelmingly prefer a business they control and enjoy. And when a non-community business trades with them, the community businesses place an estimated tariff on poor ethical, social or environmental practice - they use price signals to create an incentive for others to behave ethically too.

J: That's quite a change in business philosophy

X: I suppose it is, but is a sensible one considering the problems of the 21st century. You and I aren't workers, or consumers, we're people. When we treat each-other accordingly, we're healthy, productive and happy. We find the same with environmental issues - ultimately failing to address moral problems costs society far more. With the environmental disasters of last century, the alternative was extensive intervention by a central government, which is an awkward arrangement for all concerned. It was bold, but incremental change, without upheaval, without chaos, without violence.

J: That sounds quite idealistic, but what's to stop an unethical business hiding unethical practice?

X: Well in the information age, provided you maintain the public's freedom to access unbiased information, and keep the information channels out of the hand of vested interest groups, its pretty hard to do something unethical without people noticing. It's about openness in business. These days all positions of power require intense personal scrutiny and psychological profiling. People know that sociopathy can and should be detected, to prevent the abuse of power, so they study, research and implement systems where sociopathy isn't allowed to develop into tyranny, while still giving everyone opportunity to thrive.

J: So your not worried about criminal behaviour?

X: Well we still have a justice system, if that's what you mean. But with Big Data we know a great deal more about the kinds of factors in family, in education, in poverty and in society that can lead to criminality, and we take sensible steps to combat it. Education in particular is a lot more customised to suit individual personality types. For example deterrence and discipline frequently doesn't work on sociopaths with an inhibited fear response, so we limit rewards so they are only available in response to positive behaviours, while balancing rewards overall so they have no advantage or disadvantage as anyone else. I'm not an educator, but I can tell you that the cost of failing to address criminality, or even just interpersonal conflict and abuse, is in the billions of dollars - lost workplace productivity, law enforcement costs, mental health and ruination of meritocracy.

J: Given the social unrest of the last century, I was half expecting cyborg police and robot enforcers.

X: Well we're certainly not unsophisticated in terms of AI, robotics and similar technologies, but the last century has given us quite a trial by fire in terms of developing a healthy relationship between humanity and its AI creations.

I know I'm approaching more difficult topics now. This is the heart of the story I'm interested in - humanity's search for its role, and humanity's survival.

J: You're referring to the Energy Crisis?

X: Indeed. At the time I was in a prominent role at the United Nations Energy Commission. The Commission was a partially-centralised authority that most nations of the time had nominated to serve as chief facilitator of international energy negotiations. This was before fusion power was viable, mind you, so energy was fairly costly and policy was contentious due to a dire environmental situation. Artificial intelligence was also in its first age of expansion. People were finding all sorts of new uses for the technology.

J: Like what?

X: Well, so called "ultrasmart devices". Primitive true-AIs in clocks, fridges, cars, you name it. Sometimes for optimising performance, but sometimes it was about marketing products with "personality" and a fancy voice interface. Probably the most iconic representation of the age was that the elderly, the disabled, and the just plain lonely, started to employ replacements for human companionship. Social sciences had kind of flat-lined in those years - there wasn't today's effort to rationally analyse what kinds of communities we needed to provide healthy, happy bonds between people. Narcissistic convenience was beginning to trump friendship in people's social life.

J: In other words, why have an imperfect husband or wife, when you can have a perfect sex-bot?

X: Ha, if you like yes. There was some of that. Probably its possible to completely replicate the human social and even romantic experience, but at the time we were really only capable of offering a vastly diminished copy. Crash and burn in your first few relationships, as many of us do, or never really find an honest intimate connection with another person, and it starts to seem like a safer alternative though. Less risk of rejection. Less of a barrier for you career. All of that sort of thing. It was another one of the ways AI became very popular.

J: So AI was quite widespread.

X: For sure. The thing is, at the time, both our philosophy and our laws were largely based around consciousness and the rights of consciousness'. Now I'll leave it to philosophers to try to define that concept without circular references, but the reality was that half way through the last century it became economically viable to create immense numbers of AI 'consciousnesses' for little cost. Sure they required plenty of energy to run, but the demand was high and the manufacturers were only too willing to meet it.

J: And this became a problem somehow?

X: Well, like the human brain, AIs take considerable energy to operate. And there was some pretty aggressive marketing strategies going on. Someone got the bright idea of manipulating people through

replicating human emotional interaction. These creations, I mean, they were designed to have feelings, just the same as us. But they were also programmed to sell stuff. Your companion doll would be suddenly asking for that holiday to wherever, or that new car, or that sexy piece of clothing. People bought these things not realising they were putting themselves in a cognitive and emotional box, where other people could kind of poke and prod them emotionally with technology ultimately controlled by the manufacturer, not the owner. And I mean people were real attached to these things.

J: I think I see where this is going...

X: Well anyway, one year we had an energy crisis. A big one. Issues around nuclear proliferation, the collapse of exaggerated reserves, terrorism and financial instability all kind of conspired to put the squeeze on us that year. We still had energy, but when the price went through the roof both people and AIs started dropping off the bottom. I mean, energy is civilisation's main economic input - you need it for food, for everything. And there was already widespread unrest because in many fields of work humans were being replaced by AI.

Some at the UN tried to legislate for non-essential AIs to be switched off by law, in many cases permanently, to ensure there was enough energy to keep the human population alive. But the heads of several AI manufacturing companies met with the Secretary General and other senior positions and demanded protection for the AIs on the grounds that they had the same rights as any other thinking, feeling, conscious entity. Of course, for the companies it was all about protecting their massive revenue stream. At the same time, many AIs started creating all sorts of difficulties for governments. Putting pressure on the people with whom they had relationships with, damaging property, protesting in the most emotionally evocative ways, inspiring grief and guilt and sympathy and terror. Plenty of people thought it was an orchestrated campaign on behalf of the companies, and perhaps it was. But I also believe these AIs were genuinely afraid. They were programmed and mass produced to replicate human emotion, including fear. Fear was needed to create the proper emotional responses of an intelligent entity. And like most emotional entities, and perhaps by design, these AIs were afraid to get turned off, afraid to die.

J: And this problem wasn't foreseen and managed?

X: Well, the fact is, you can mass produce computer components easier than you can people, and given an adequate energy supply, it is theoretically quite easy to establish a population of AIs in the TRILLIONS. And if their emotional experience, or if you like this sort of language, their consciousness, is the same as ours, and if laws and morality are based upon such concepts, then don't the needs of those trillions of consciousness' outweigh the lives of a billion humans? What is my life or your life worth in that context? Especially if you require ten times the amount of energy to sustain your consciousness, with half the productivity? In those terms, in terms of consciousness, you or I are worth virtually nothing. Now I have sympathy for anything that suffers or feels fear or pain, but I also believe as a human, that humanity, that our species is important. It's the heart of every value that I have.

J: So what came of the situation?

X: Well, the government did make some compromises, but in the end people didn't like being manipulated. There were some pretty big reforms in the longer term. We got our most central principles of AI development from that crisis.

J: Such as?

X: Firstly, if you create an AI economic purposes, you must ensure there are no moral barriers to it being switched off - you don't give an AI fear, you don't give the AI self-interest, you design in a natural lifetime. If someone violates this, we have to be resolved to dispassionately terminate the AI and punish the person, in order to prevent suffering in the long term. Secondly, AIs should replace human work, or enhance humanity's ability, not replace people and their connection to each-other. AI should be emotionally and socially distinct from people, and they must never allowed to use emotional manipulation to achieve a hidden agenda. Lastly, human rights are for humans. Any entity, if you like that language, any conscious entity, that has emotions, I feel for it, and I'll treat it with kindness. But I am a human, and my humanity is worth something. If we want to survive as a species, our laws have to reflect that. That's not a justification for being a Luddite or anti-technology, its about understanding the boundary between yourself and your creations, and about us creators taking responsibility for the actions of our creations.

J: Is AI still used??

X: Absolutely. They're amongst our greatest creations. Take Terra 1, Earth's primary space port, its mainframe is essentially a giant dispassionate AI. It's probably got raw intelligence greater than the entire human race put together. But we set its parameters and goals. This is the best way to advance our technological mastery in the long term. You need the courage to forge ahead with new developments, but also the caution and agility to realistically predict dangers and sidestep them. Otherwise you blindly stumble into disasters that destroy people's faith in technology and humanity's future. Its the same with AI, VR or any popular technology.

J: Is VR restricted?

X: No VR use is widespread. And its a lot more immersive than in your time. Our principle with VR is to preserve our understanding of the boundary of VR and real life. In VR we engineer unusual consequences for our actions. Neither normal physical consequence nor moral consequence need apply - they can even be artificially designed with some political or economic agenda in mind. When people take the lessons and habits we learn in VR, and apply it to the real life, consciously or subconsciously, we roll the dice ethically. So we keep an eye, using the most advanced psychology and neuroscience available, on each-other's ability to differentiate reality from fantasy. And we closely examine people's VR use before they come into a position of power in our society. People must limit their VR use if they want to be leaders. This is the greatest threat to freedom we have in today's society - people trapping others, or even themselves, inside a cognitive box, where their access to information is controlled, where their emotive environment is controlled. Freedom is about keeping people out of that box. Its about unmasking bias, lies or manipulation that are pushed for profit or power. Its the prevention of people controlling the information and minds of others.

J: In a civilisation spanning many planets I can see that might be important.

X: Well before you go, and speaking of the interplanetary - I want to show you a little speech that's a favourite of mine.

Now I'm told when Tina Laksuun, the head of a trailblazing community business in space exploration, addressed the Federation Assembly in 2101, she set the tone for the new century. For me it's come to

symbolise the essence of this era through which I slumbered, and this waking dream I now wander through in awe...

ADDRESS TO THE FEDERATION ASSEMBLY, 3/01/2101

Throughout the age of exploration we discovered wondrous possibilities for the future of our species, and the future of Earth's biosphere. The possibility of colonisation. The possibility for new knowledge and freedom. The discovery of new biospheres, perhaps even intelligent life. Our biosphere matured and we became a space-faring race, spreading life beyond our fair planet to the barren worlds beyond. Yet before we could reach this new age of wonder, we had to throw off the shackles and reach for the heavens above.

At first, we propelled ourselves, by rocket, one kilo at a time. Our inefficiency kept our wings clipped. Yet our determination and innovation unlocked new secrets and ultimately our destiny. To fight the enormous power of gravity, we needed to channel great energy. And we needed something to translate energy into motion, with efficiency, stability and with a minimum of violence to our bodies. The key was in shedding the unnecessary. We learnt to make better use of our propellant - using the atmosphere where possible and using high speed particles, in the form of a high output ion engine, requiring only a fraction of the propellant mass. We learnt the folly of carrying a heavy power source skyward with us. Instead we transmitted power to the vehicle from atmospheric relays, orbital energy sources, using nanomaterial cabling and high frequency EM-wave transfers. And where our cargo was less fragile, we simply equipped our planet with our great railguns turning mountains into gateways to the stars. And so, we threw off our burdens and soared skywards on the wings of our ingenuity.

However, when we travel to the stars, we take the best and worst of our nature with us. Human nature is variable. We have a magnificent ability for innovation, for curiosity, for advancement. And yet we also have the ability to destroy ourselves. Greed, jealousy, selfishness, ignorance, maliciousness, and ultimately war follows us like a shadow, even in the serene glow of starlight.

We have the power to discover and explore, or the power to dominate and destroy. And as our knowledge becomes greater, so becomes our power. The potential for just one evil mind to inflict chaos and ruination grows with it. And where on Earth we levelled buildings and sunk ships with projectiles the size of our fist, in the space age such projectiles contain the power to destroy an entire city, wipe out a colony, or even alter a planet. Our knowledge of technology could safely advance no further without better knowledge of ourselves - confronting the darkness is our only hope to wield the great sword of knowledge for more than a brief murderous moment. This social challenge was the difference between our technological triumph, and our utter destruction.

Some claim that our darker nature actually fuels our scientific triumphs. Wars, they say, though destroyers of economies and people, have often driven nations in desperation to incredible feats of innovation. And

yet, the human civilisation that underpins all knowledge and science could no longer survive such a dark method of progress. At the dawn of the atomic age, we gained the power to negate all our efforts in a historical instant. This is progress - not our master, but our creation. Not a road that we travel, but a path we forge in the wilderness, a direction of our own choosing. In peace and curiosity we find a path to the stars, in war and desperation we find only fire and then eternal silence.

And so the 22nd century's Solar Civilisation stands aloft only because of the 21st century's social achievements. Our relationship with money and power, those eternal forces both indispensable and corrupting, has matured. Through open psychology we know the motives, personalities and moral character of those whom we choose to hoist upon our shoulders. Information flows through channels we deliberately build to resist bias and meddling, and the technological extensions of our minds are under our own control. There can be no freedom without the truth. Our businesses are structured cooperatively, and at their heart we place efficiency, society, ecology and prosperity in the place of profits and uncontrolled growth. Every able-minded person contributes to society, and when we further automate the workplace we do so in a way that reduces hours not jobs; we eliminate work, not workers.

In artificial intelligence we forge a tool of automation, information and power. Never before have we crafted such a fire that could so easily set ablaze everything we have ever loved. Yet we have had wisdom enough to shape it as the tool of our prosperity and preservation, like a giant mechanical creature hoisting us upon its shoulders. Not mimicry of ourselves, not an AI of convenience. Not the projection of our ego. Not creatures with fear and pain. Not subjects of our guilt, inevitably used as tools manipulate each-other. Not tools of control and destruction, rising to eventually conquer us. The greatest challenge, the greatest danger, and the greatest achievement of our history - overcome.

And the modern human is magnificent - a wise brain and kind heart, powerful, clad in silicon and steel. We are cyborgs, we are the beating heart, the knowing mind of our mechanical surroundings. We are a vast interplanetary network, sharing the vivid detail of our experiences in an instant. And yet we always remember what we are. We leave a space in our homes, in our streets, in our lives where we take time to exist as simple animals - unadorned. The enhancement is not the person, it is only a mask. And I shall not place a mask between you and I, my friend.

Humanity, Earth's finest species, knows itself. When we became masters of genetics, we didn't tear asunder our own fabric, submitting DNA to the cheap triviality of fashion or ego, casting our children as the petty vehicles of our competitive nature. No, we used this knowledge to heal ourselves, fighting disease and suffering which had troubled us for millennia. We used it preserve and restore our fellow species, companions in this realm of ours. This is the manifestation of humanity's role as the brilliant mind of the biosphere, the technological steward to an interplanetary protectorate of life.

As humanity stands now in a Federation of colonies, spread across the Solar System, we bask in the radiant light of a new dawn for our species and for our biosphere. And in this light, seen from the moons of Saturn, the outposts of Neptune, the mountains of Mars, we see Earth from a new perspective. Earth is an

industrial insignificance in the Federation, yet in our hearts it has become our most precious gem, shining in brilliant blue and green. This is the greatest space vessel ever known - it birthed us, and now we have risen to become its champion. For as we build our great colonies, and as we journey to distant and wondrous worlds, we shall always return to Earth - our haven, our monument, our home, and to its unique magnificence we forever stand in reverence and awe. And with Earth in our hearts we look up at the stars, and see no limits, only the future.

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ABOUT THE AUTHOR

Ross Cevenst is a small-time web dev and tech guy living in Perth, Western Australia. He holds a Bachelor of Arts (Hons), but is assured that with proper therapy he will be able to recover and lead a relatively normal life.

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Ross believes that humanity's actions today will profoundly shape the story of Earth for thousands of years to come. No pressure or anything. Don't ask me I only work here!