

Commencement Speech
Department of Communication
Stanford University
John Seely Brown
June 12, 2011

Good afternoon.

Today, you must be feeling a tremendous sense of joy but my guess is that you might also be feeling a slight sense of sadness. Why sadness? Well, as you leave here today, you are leaving behind one of the most unique places in the world. Your department is not, by any stretch of the imagination, a normal Department of Communication. Rather, it is one of the most pioneering and technologically sophisticated research centers in the world.

Your challenge now is how to use all the cutting edge ideas you have discovered and helped build here to move on to new adventures. I like the word adventure – it is a term we tend not use enough in the academy perhaps because we think we should have a well worked out road map of our life moves starting the moment you leave here today.

I, too, graduated at the beginning of an earlier information revolution where we had some really heady ideas around building a grand unified theory of the universe based upon a new theory of information – encompassing physics, neuroscience, complex adaptive systems and self replicating machines. I also was responsibly advised to build a career plan - to only interview for positions at premier universities and so on. But alas, I was in love. Admittedly in a strange sort of way.

I had bonded with the 36 bit architecture of the PDP 10 built by poor Digital Equipment Corporation. Yes, I was a bit fanatical over this machine so I made a list of all the universities that had them (two in this country at the time and a couple of research centers such as SRI and BBN) and set out on my BMW motorcycle to hunt them down and set myself up next to one of them. Of course, it had never dawned on me that I should dress properly for my interviews; that showing up in my full motorcycle gear might not be a winning move. I was taken by the adventure of the hunt, and I liked the unknown of travel, so I was off without a clear career plan, but with plenty of commitment.

Well, what followed was a life long adventure starting out with appearing before the associate provost at UCI for a job interview after having driven across the Mojave Desert all night

and then on to being interviewed at SRI and being pulled over by the police, here in Menlo Park, because of how I looked – rugged. (But I was quickly released after they verified my story that I really was interviewing for a job at SRI as a research mathematician).

This was the trip that launched my career. Little did I realize that these first two encounters would begin a cascading set of events and connections that took me from being a graduate student at University of Michigan to being on the faculty at UCI to being a research scientist at BBN and then onto becoming a principal scientist Xerox PARC. It was just those two meetings and my somewhat bizarre obsession with the PDP 10.

My point here is a simple suggestion to not over plan your career but, instead, to trust serendipity and to realize that serendipity can be shaped. Luck doesn't just happen, it can be shaped as long as you are open to reading the context as much as the content of a situation—a point I shall return to later.

We are again at a very special moment – it is a Cambrian Moment – especially in the field of communication where classical boundaries are being blurred – boundaries such as

those between the virtual and the real, between learning and teaching, between cognition and emotion.

And it is a moment where artifacts, themselves, have personalities that can persuade and coach in nearly trans-human ways.

This fact was powerfully driven home to me by reading the extraordinarily pioneering research going on in your department. In particular two recent books blew my mind:

Infinite Reality: Avatars, Eternal life, New Worlds and the Dawn of the Virtual Revolution

Total Engagement: Using Games and Virtual Worlds to Change the Way People Work and Businesses Compete

To me, what makes this particular moment so special is this feeling of being in a moment of great change and great possibility – one that requires regrinding the conceptual lenses through which we make sense of this increasingly connected world. For me this is the time to move beyond narrowly defined issues and simple problem solving. By reframing issues, by stretching our imagination, we can engage in **world building**, not just linear innovation or creative problem solving. It is this sense of opportunity, this sense of immediacy that created the

flash back for me of my motorcycle trip and my reflections on being at PARC.

PARC STORY

Permit me to put my own spin on Malcom Gladwell's recent article in The New Yorker on PARC but situate it differently. Probably the question I get asked most often is about how the magic of the early days of PARC can be replicated. And my usual answer does not please them. I point out that part of the magic of PARC was the magic of the moment.

Back in the mid 70s we were living in a different kind of Cambrian moment- not that we called it such or even really realized it, but nevertheless it was a similar moment of extraordinary newness. Everything was up for grabs. VLSI was coming into play letting us build devices that were simply unimaginable just a few years earlier. New computing languages were being invented. Bit slice micro processors were being built that allowed the adventurous to design and build their own computers around novel architectures; and so on.

It was in this context that Xerox launched PARC under the broad charter to explore/define/create the architecture of information. Wow, I thought – what the heck did that really mean? **And that was the POINT!** No one exactly knew –

certainly not us. But we had our imaginations – we were charged with **world building** – to envision a new world (much like George Lukas did in building Star Wars or Blizzard did in building World of Warcraft or J. K. Rolling did in constructing the intricate world of magic in Harry Potter).

We had a new set of tools to build this world and a very simple but important mantra - build what you need and use what you build. Or said in different terms, don't wait for an ecosystem to construct what you need, just imagine it, build it, use it and improve it thru use. That was our grounding.

For this to work, we needed folks who were craftsmen to work side by side with researchers. Indeed, to most of us there was no real difference between the two – our collective imagination welded us together. Key to our imagined world was a new kind of infrastructure where everything could easily talked to each other (enter the Ethernet) and where there were no instruction manuals for the systems we built. Our goal was to make everything so intuitive and robust that you could simply guess at what to do and see what happened. But we also wanted to create a kind of implicit synergy and resonance between the various systems comprising 'our world' so that magic would emerge from their interactions.

For example – what is the point of inventing bit map graphics if you couldn't print faithfully what was on your screen? Chain printers certainly couldn't so laser printers had to be invented enabling us to write on screen and print on paper in almost the same the way. (Perhaps a bit of poetic reconstruction here but you get the point.)

Key to this world building effort, was having folks from diverse scientific disciplines working side by side - including computer science, mathematics, anthropology, sociology, musicians and artists. But how would you get researchers from these different disciplines to play together?

Well, you can't push researchers, especially from such diverse fields, to work together. Instead, the problems, themselves, had to pull us out of our own disciplinary silos to come together to craft the foundations of our imagined world.

But it was also more than the problems specifically. It was the awe of creating something as mysterious and wonderful as the magical world of Harry Potter - a world that needs no electricity but can run solely on magic - that galvanized us to leave our epistemic beliefs behind and engage, albeit with productive friction, in real **world building**.

We are now, again, in a moment where we need to think of world building but now of a new kind. It is a moment that is not only about making amazing things. Perhaps, also, for the first time we can make contexts as easily as we make content/things. And as all of you here know, shaping contexts allows the emergence of meaning in powerful new ways – for better or for worse.

But in addition to having a new arsenal of tools for shaping meaning we now have ways to create a networked imagination – one that emerges around joint action. Those of you that engage in high end raids in World of Warcraft already know what I mean but we might also start to interpret some of the events of the Arab Spring thru the lenses of thinking about a networked imagination. It is about much more than just twitter streams.

So my take on what you all face, graduating today, is this unique opportunity to craft a new tool set and a new set of conceptual lenses. To not settle for just problem solving but rather world building.

But let me caution you, world building requires an empathetic ability to listen with humility – to listen across epistemic boundaries - to listen across generational boundaries and to

listen across cultural boundaries, and always global in scale. We live in a world of accelerating change that is becoming more globally intricate by the moment. These are not boring times. This is an adventure.

Thank you and good luck.