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Manga, Myths and Magic

playing with the future in the mobile telecoms industry¹

by Laura Watts

performed at
Institute for Media Literacy, Annenberg Centre for Communication
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Prologue

The mobile telecoms industry is particularly concerned with the future - its future, measured in the next billion mobile phone subscribers, the megabits per second of bandwidth, the potential revenue from the next killer application², and the cost of radio spectrum licenses (thirty five billion dollars in the UK alone³).

But despite the hockey stick graphs always predicting the next big exponential thing, the future of the mobile telecoms industry is not just a numbers game. It is a game of passion and, perhaps, one played with an increasing sense of determination: with all that bandwidth, all that investment in infrastructure, how to actually get your two billion subscribers to use it and pay for it. How to enchant them with devices, content and applications? For the future is not a fixed utopia of anyone, anywhere, anytime connecting with some ethereal global mobile network. It is fluid, transient, particular and multiple; there are many possible industry futures. And those futures are made, tangibly, in the ongoing practices of particular organisations; they are an effect of the dreams, stories and technologies that marketers and engineers create and tell to one another.

In the words of one Venture Capitalist I interviewed:

"[I'm] not quite sure what [next generation mobile] is anymore... We thought we did... when we were selling networks to people, we had a very good idea of what it was and what people were going to do with it... - it's video, which is totally unproven... And we all bought into that. We all said yes, you're right. And even after... everyone was having some doubts,... we all said the same... So even when doubts were creeping in about the amounts people had paid, and the amount the networks cost to build out... we had all these ideas about fantastic services that were going to be delivered: video clips, gambling applications. All sorts of things that were going to require a [next

² This phrase, killer application, is frequently debated in the industry. Text messaging is often cited as a previous example of an application that has led to extraordinary market growth and, although often regarded as an outmoded concept, it remains in regular parlance.

³ This was the eventual cost of spectrum licenses for 3G mobile networks from the auction of licenses in the UK in 2000.

generation] network. [But] what it comes down to in the end is streamed video. [And] there are now people who say they can do [that] over [the current network]."

Futures multiply, they are always unproven, always shifting. None are utopian, none are global, all involve situated⁴ imaginative and technological labours. My research is part of those labours, although it is not beholden to the industry, nor cares for its commercial and economic success⁵. Rather, it tells ethnographic stories of the making of the future of the mobile telecoms industry as an interference. I say the stories are ethnographic since they remain empirically accountable to a set of words, artefacts and materials gathered during a four month ethnography of the industry in the UK⁶. Nothing I write is pure fiction. But nothing I write is pure fact. How could there be a singular account for so many possible pasts, drawn from the residues of my ethnographic record (for partial residues is all that I hav? Embodied experience and interaction in the field are only ever a memory and the scratchings of pen and videotape; memory and tape can create only one story of what was⁷. It is in that ambiguity of memory and imagination - in the allegory of ethnography as James Clifford⁸ might say, in the poetics of an archaeological excavation⁹ of sociomaterials - that my ethnographic

⁴ By saying 'situated' I am invoking the principle of 'situated knowledge' from Science and Technology Studies (Haraway 1991a). This is the principle that knowledge and ideas are not universal, but located in a particular place and time, and are the effects of particular and located practices.

⁵ Explicitly, this research is not funded by industry, nor does it have any deliverables to industry. I am, however, extremely grateful to all those who gave so generously of their time and helped make my field work possible.

⁶ My ethnography comprised four months part-time ethnography at a design studio in a major mobile telecoms manufacturer, four in-depth interviews with variously positioned people in the industry, an ethnography of a series of closed industry association meetings, a record of an international industry conference, and an ongoing catalogue of the virtual presence and landscape locations of mobile telecoms companies in the UK. This is also supplemented by my own experiences working inside the industry for six years, before I moved into academia.

⁷ Through a detailed analysis of the use of videotape in a jury trial, Charles Goodwin argues that vision is not given but socio-materially constructed, an effect: "The ability to see a meaningful event is not a transparent, psychological process but instead a socially situated activity accomplished through the deployment of a range of historically constituted discursive practices" (Goodwin 1994).

⁸ James Clifford has famously declared that all ethnographic writing is allegory (Clifford 1986), a move that I support for the reasons suggested in this piece.

⁹ For a discussion of 'poetic archaeology' see Michael Shanks, 1992.

writing exists and performs its politics. The hybridity of such writing, the mixing of both compelling fiction and fact, is the generative move that performs my interference¹⁰ in the futures of the mobile telecoms industry.

The two pieces of writing that follow attempt to interfere, then, in a particular moment of future-making in the mobile telecoms industry. They are also, I hope, a working demonstration of something of the method of my interference. Hence this, rather extended, pre-amble as an attempt to sensitise you-the-listener to particular facets of what follows.

Here, now, are two ethnographic descriptions of two possible mobile telecoms companies, in two very diverse places, making two possible futures, both accountable to a shared ethnographic record.

¹⁰ Donna Haraway has proposed the optical analogy of interference, where a fieldsite or trope is diffracted; a generative alternative to the endless reflection of critique. The practice of interference is perhaps exemplified by her creation of the cyborg figure and trope (Haraway 1991b).



Company: M-Phone

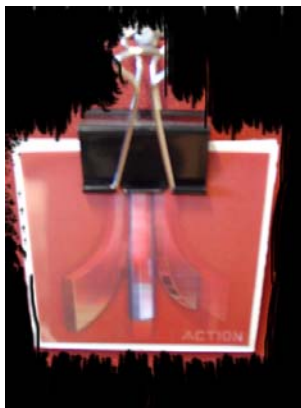
It is almost ten o'clock. The workshop to produce a new concept for the future of the video business was timetabled to begin at nine. We are waiting for a delayed flight at Heathrow, at least that's what I have been able to piece together. At moments like this people float away to the Café downstairs in the atrium, into other meetings on their mobiles, became entangled in this mornings' one hundred emails to answer before lunch. Without purpose I feel very detached and disconnected from the designers, haunting the grey-lit mobile phone design studio for another displaced soul whom I might spook and talk to.

The burgundy and black corporate office décor is interspersed with moments of designer-distinction: a library space replete with low-slung felt and steel sofas; an unused photographic dark room now filled with a table football game. The central hub of the studio, however, is a large square, Ikea-ised room of fiery orange and rattan rocking chairs with sheepskin cushions. But this morning its blind is drawn across the entrance, signalling No Access. I try to tidy myself out of the way at a round table in the centre of a collection of desks. The table is piled high with scans from pages of obscure books on visual culture, as well as the bare flesh and bikinis fronting the mobile device magazines of Stuff and T3.

I swing around in my chair, taking in a three-sixty of the four desks: two industrial designers, two fashion designers. In amongst the stacks of paperwork, the vast twenty-one inch monitors, laptops, cables, and glossy illustrations, I notice that there is a collection of model cars and Manga toy figures: a Manga figure with a bazooka, and a Volkswagen Campervan miniature, hold particular pride of place.

Bob wanders past and catches me peering at the figures, so I jump at him and begin asking questions. I learn that the models are officially designated as Product Samples. The designers can "buy anything within limit" apparently.

"Not a BMW, though" he says, flashing a grin of square teeth beneath his square-rimmed glasses. He invites me over to his desk to see his own collection of so-called Product Samples. I'm distracted by a strange ball, covered in odd nodules, some kind of toy perhaps, but



Bob refocuses my attention on his Mardi Gras Power Ranger figure, resplendent in its green and gold armour.

"Technically speaking it belongs to the company" he says. He tells me that they used to be based in the city centre and regularly spent their lunch hours at a local toy shop, buying figures. But he needs to get back to work, so I note the logo of Atari, the computer games company, hanging over his desk and wander away.

The meeting room, a lurid boardroom in neon purple and pine, is still empty. Tony, the convenor, is on his landline, intense and crunched with politics, hand pressed against his head with concentration. The boardroom is usually locked (everything in the company is locked against somebody) so I decide to simply take advantage and be nosey. With a slightly raised heartbeat, I begin poking through the cupboards along the wall. It's mostly an unexciting assortment of power and Ethernet cables, but at the end of the row there is Sony Playstation console, stuffed onto a shelf. I look at the top-of-the-range ceiling projector above me, and then at the console, and then smile. At my old design studio, where I once worked, one of the first misuses of the digital projector involved hooking it into a games machine.

"Hello...?" A voice calls to me from the doorway.

I have been caught. It's Andy, who always seems to have one eye on my exploits. But his shaved head and black goatee beard dips with a friendly nod.

"Did you want to join a football table team? We're a person short next door."

No, but I will definitely watch.

The classic wooden football table fills most of the small photographic dark room. There is just enough space for Andy and Bob to stand on either side and whip the rods round, flicking the ball between the plastic players. It was bought a few months ago as a replacement for the Playstation, a joint decision made by all the designers, allegedly. As I suspected they used to have the

Playstation connected into the projector, but it was "too invasive". Whereas the football table can "fit in a quiet corner".

Another two designers join in to make up the teams. Now there are cries of delight and frustration echoing across the studio, across the heads of others working and on conference calls. Liana, one of the senior fashion designers, walks passed, studiously ignoring the room.

"Have you played this?" I ask her, acutely aware of the gender distinctions the game, and its all-male players, might invoke.

"No, and I have no interest in it," she says firmly and heads into the boardroom.

Abruptly I realise Tony is no longer at his desk, and that the workshop must, finally, be about to begin, if it has not already.

I make my apologies to the football players, and duck into the now half-full boardroom, taking one of the curved, purple chairs by the door. I settle my notebook and pen on my knee, deliberately holding them below the line of the boardroom table, and flex my fingers, preparing my worn knuckles and digital sinews to write in earnest.

There are around about eight people here, less if you discount those already churning through their email, hiding behind laptop lids. Many are lolling expectantly in their chairs, impatient. Tony is standing at the front before a PowerPoint-filled screen. He glances at me apprehensively, tense. There is a lot to accomplish today and we are already running more than an hour late. I know I am an extra burden on time, prepare a minimalist introduction to those from other sites who do not know me, barely two sentences. They shrug with disinterest, I'm just another eccentric aspect of the design group, part its easy inter-disciplinarity.

Tony begins the meeting with a rousing call. It is all I can do now to write a fraction of what is said¹¹:

¹¹ The words and phrases quoted have been edited and altered, where necessary, to protect the copyright and intellectual property of the fieldsite.

"Think logically, calmly, where the future lies for [redacted]"

"he has the ideology of what [redacted] is about"

[redacted]

".. become disruptive of the market, then that's good, very good"
key word - vibration

"we brainstormed around evolution of technologies"

3D displays expect on phones in a couple of years.

"The future is not more smart phones, I do believe that"

"Don't see the pixels" - visual acuity already
number of visible colors already beyond
human capability

"It's happening, because it can happen"

"need to design iconic products"
"You don't design an iconic product, it becomes iconic"

"Digging shells up, a box of prints from the attic. That's
an experience we should understand... nostalgic experience"

[redacted] but have
access

"Something you hand on from generation"

In terms of recapturing the youth market this could be
very cool "

"There is an acute memory problem"

"ah, this is the future !.. we can't worry about that"

"[We need to] think logically, calmly, where the future lies for [video]... We have this ideology of what video is about... [if it] becomes disruptive to the market, then that's good, very good."

A representative from mechanical design begins his PowerPoint presentation with the words from the John Lennon song: Imagine all the people, sharing all the world.

"We brainstormed around the evolution of technologies," he begins. "3D displays are expected on phones in a couple of years."

"The future is not more smartphones, I do believe that," Tony interjects.

The mechanical design representation reads off a heading on another slide: I want to connect memories, times and places.

"[In 2006 you] don't see the pixels... visual acuity, the number of visible colours, is already beyond the human capability."

"It's happening because it can happen," explains one of the engineers.

"We've been asked to design iconic products", explains Tony, "[but] you don't design an iconic product. It becomes iconic."

"Digging slides up, boxes of prints from the attic. That's an experience we should understand, [that] nostalgic experience." Tony, again.

"But how to access something you hand on from generation [to generation]?" Someone asks.

Now a representative from the consumer group presents a slide: the art of enchantment, making something magical.

"In terms of recapturing the youth market this could be very cool," remarks an industrial designer.

One of the mechanical designers is concerned. "There is an acute memory problem," he says.

how you stitch together an entire experience. That's the thing.
 "Free your mind. Free your creativity" [redacted] says

What can we do to make the memory experience more
 -believable - believable - of higher quality

Memories don't have to be the truth of anything.
 They don't have to be believable.

Talking about how to stop video → video communicating

"It's the science fiction dream... all the advertising
 that Hutchinson did... still can't get people to do this

How to create an experience for your senses

It's the qualitative part of what [redacted] is all about.

"The deep immersion of Hollywood content, our Dolby...
 42" screen. How to bring the same kind of immersion
 for virtual experience... [redacted]"

Tony shakes his head. "Ah, this is the future. We can't worry about that."

In the background the air-conditioning hums, and the numerous fans in the projector, laptops and desktops whirl away at me. I begin to feel sucked dry by the noise, like the marrow of my life is being leached away. My head aches.

Most of the day has passed, a lunch of canapés has appeared on a trolley from catering and been devoured. There have been constant distractions: phones ringing, musical interludes from ringtones, people walking in and out taking calls. The meeting has been thoroughly disjointed.

Finally Dan arrives, a product manager from marketing, and the internal customer for this new video concept. His stance is that distinctive managerial loose-hipped swagger with crossed arms. Tony hovers behind his shoulder, pointing out the three proposed storylines and associated designs grouped under three headings.

"How do you stitch together an entire experience? That's the thing." Dan remarks.

"Free your mind. Free your creativity," murmurs someone.

"What can we do to make the memory experience more believable, higher quality?" asks Tony.

"Memories don't have to be the truth of anything," Dan reminds the group, "they don't have to be believable."

"It's the science fiction dream... all the advertising that Hutchinson did... still can't get people to do this."

"How to create an experience for your senses?" asks Dan. "It's the qualitative part of what participation it all about."

Tony is with him, nodding. "The deep immersion of Hollywood content," he adds, "with Dolby [and a] forty-two inch screen. How to bring the same kind of immersion for virtual experience?" He points to a flip-chart titled, the magic of participating.

"From voice to rich communications, what barriers do we need to overcome?" someone asks.

"What's the real secret to this multimedia communication?"

"What's the magic that will make participation really work?" Tony is asking. "The magic of participating is crucial," he adds.

Dan gestures at the three concepts, each described by a series of phrases and a product sketch. "You're a hero, Tony," he says. "This gives us something aspirational to head towards."

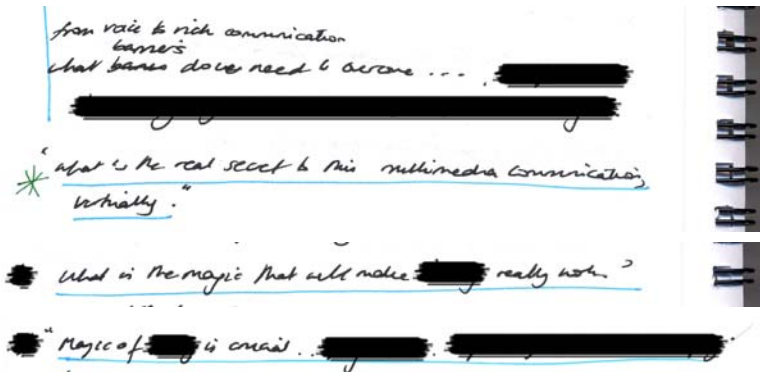
On three pieces of paper the concepts are named:

Living the past,

In the moment, and,

The magic of participating.

I stare at the these words and images that represent a future of the mobile telecoms industry, a future as created by these people at this moment in time, in this company.



Company: Sand14

It is just before nine in the morning, and it is still barely dawn. Simon has made me their ritual morning bowl of hot chocolate, and he and I have been sitting in front of the huge geodesic window in the atrium, watching the stars fade into blue twilight. It is unusually clear for Orkney in winter. I have been here, in this archipelago floating above Northern Scotland, for more than a month, and usually the morning mist settles in amongst the hills and sky, hiding their features. A few stars remain. This far North the days shorten so perceptibly, that you almost feel the axes of the Earth's orbit dragging you, day by day, away from the heat of the sun. This far North you also feel time stretching. We have been waiting for two days for a colleague of Simon's to land at Kirkwall airport, on the other side of the island.

"I told him to come by boat," Simon mutters, with a sigh.

We are waiting to hold a workshop on a new video concept for the mobile telecoms industry. Yesterday I played chess at the airport with Anne, the anthropologist, waiting to see if the visibility was good enough for the plane to land.

The spotlights are switched on inside the domed atrium, and the blue dawn is washed away in the reflective glare. It's Anne, kicking off muddy boots by the door. Above her, swinging in an arc around the back of the dome is a gallery floor, a hideout for moments of intense work. Behind the strung railings I can now see the hunched figure of Richard, the frenetic heartbeat of the company, staring at a laptop monitor screen, and punching rapidly at the keys with his index fingers. He may have been working there all night. The real central hub of the design studio is, however, the towering cube of stone at its centre; a two storey house one-up, one-down, and inside an ever-burning peat fire warming wooden chairs and sheepskin cushions.

"He'll be coming in to Stromness this morning," calls Anne from behind her makeshift desk. Stromness is the ferry port to Scotland, so our delayed guest must have given up on the aeroplane and taken a coach up the long road to the ferry terminal.



Simon is now busy at his desk, its surface laden with bits of electronics, testing equipment, laptops and endless piles of paper. He is setup on the far side of the window, looking straight down the loch towards the open sea. Simon and his desk are, together, a source of much of my inside information. He looks up as I pass by, writing these notes.

In pride of place, on a tall stack of papers, is an odd lump of stone that I haven't seen before, slightly larger than a tennis ball and covered in huge circular nodules and scratches.

"It's a replica of a Neolithic carved stone ball." He explains. "One of archaeology's great mysteries. No one has the slightest idea what they're about."

I should have guessed at its archaeological heritage, for Sand14 is a company built upon the premise of: New futures inspired by archaeologies of the past.

Simon throws me the ball. It's lighter than I expect, rough and cool, and sits restlessly in my hands. We toss it back and forth playfully a few times. I hold up one of the circular extrusions to my eye, squinting towards the brightening sky as though through a telescope.

"You know, what? I think it will make a great mobile device." Simon says, unexpectedly. "In terms of recapturing the youth market it could be very cool." Then, with a second glance at the now distinctly blue sky, he calls out to the room, "Anyone for boomerang-ing at Brodgar?"

This I have to see (for the Ring of Brodgar is a prehistoric stone circle on the edge of the loch, just a few minutes walk up the road).

Four of us bundle up into warm coats, tie on our boots at the door, then head out around the side workrooms to the front of the building. Simon carries a small backpack against his wiry frame and skips easily ahead.

It is cold but bright, the wind low. It is hard to write, even with fingerless gloves on. Will capture what I can.



*In terms of recapturing the youth market this could be
very cool "*

Pass the monolith of the Watchstone... onto the isthmus that separates the two lochs, freshwater and saltwater... the twenty or so toothy stones of the Ring of Brodgar glisten before us.

Anne, Simon, and a German contractor called Olaf, take turns to throw a boomerang around the ring of stones. It buzzes in the air as it wizzes past, swings round in a hyperbolic arc - sometimes even hangs in the air for a moment, just spinning. We all try to catch them as they return. One wooden boomerang spins up and around, and comes to hover almost at the centre of the stone circle, it's ends flashing in the sun.

Realise, abruptly, that time is getting on. The boat must have come in, and the workshop may even have started. Head back to the grass-covered dome of Sand14, just on the other side of the inlet.

Inside, I notice that Richard has vanished from his gallery perch, and pound up the staircase to reach the upper floor of the square house in the centre of the dome. Inside is a cosy library in burgundy and recycled oak. In one corner a metal flue from the peat fire below radiates out warmth. Books are everywhere: lining shelves, stacked haphazardly on the floor, on the table. Images and print-outs are stuck onto most spare wall space. Long slits of windows slice the air with yellow light from the world outside. What is, allegedly, Richard's old timber dining table, sits majestically in the centre of the room, rather scratched and stained. I take a cushioned seat by the door, relax back with notepad and pen ready. The newcomer, a man with frazzled hair and a technicolour jumper, has been given a mug of coffee and a large slice of the fruit cake on the table.

Richard is pacing with nervous energy back and forth, occasionally ducking down to make furtive comments to the man in the jumper.

I wonder if I need to introduce myself. But Richard points at me and says, "And that's our ethnographer. She'll be taking notes." I nod a hello, and we are introduced. The jumper-owner is named Keith.

Richard leans in to him and says, too loudly, "She has probably already counted the number of bites you took to eat that cake." Then stretches his mouth in a sudden conspiratorial smile, and looks merrily at me.



Simon and Olaf soon arrive, fresh-faced from boomerang-ing, and the discussions begin in earnest. My handwriting can only keep up with a few of the comments:

They begin talking about the mobile telecoms industry fixation with video communication. They want to try and address this directly through a new concept.

"It's the science fiction dream. All the advertising that Hutchinson did... still can't get people to do this." begins Simon.

"[We need to] think logically, calmly, where the future lies for [video]. We have this ideology of what video is about... [if it] becomes disruptive to the market, then that's good, very good." Richard is on a roll.

"We brainstormed around the evolution of technologies," Keith explains. "3D displays are expected on phones in a couple of years."

"The future is not more smartphones, I do believe that." says Olaf. He takes up a pen and writes in large letters on some paper: I want to connect memories, times and places.

"[In 2006 you] don't see the pixels... visual acuity, the number of visible colours, is already beyond the human capability." says Keith.

"It's happening because it can happen," he adds. I notice he is doodling bug-eyed robots on his pad of paper.

"Digging slides up, boxes of prints from the attic, that's an experience we should understand, that nostalgic experience," says Simon.

"But how to access something you hand on from generation to generation?" Keith the engineer, again.

Simon reaches over and places the carved stone ball on the table, under a spotlight. Everyone picks it up, and feels its odd surfaces. Keith handles it for a few moments, and then starts sketching something schematic-looking.

Talking about how to slip video → video communicating

"It's the science fiction dream... all the advertising that Hutchinson did... still can't get people to do this"

"Think logically, calmly, where the future lies for [redacted]"

"he has the ideology of what [redacted] is about"

"... become disruptive to the market, then that's good, very good"

key word - disruption

"we brainstormed around evolution of technologies"

3D displays expected on phones in a couple of years.

"The future is not more smart phones, I do believe that"

"Don't see the pixels" - visual acuity already number of visible colours already beyond human capability

"It's happening, because it can happen"

"Digging slides up, a box of prints from the attic. That's an experience we should understand... nostalgic experience"

[redacted] but least access

"something you hand on from generation"

"It's the art of enchantment, making something magical." suggests Anne quietly, from the doorway.

The room is silent for a moment. Realise it is getting stuffy with the heat. I am being lulled to sleep. My head hurts with writing beneath the hot but dim spotlights - it's hard to concentrate on what people are saying.

"There is an acute memory problem," Keith is saying, concerned.

Richard waggles his fingers in response. "Ah, this is the future, we can't worry about that," he says.

The carved stone ball now sits upon a pile of notes scrawled by Olaf, and scribbled schematics from Keith.

Realise much of the day has passed. Lunch of fresh soup and crusty bread has been ferried up from the kitchen below. Another cake and a cooling jug of custard sits with the piles of used crockery and mugs on the table. Richard calls a halt, just as I am about to make my excuses to get some pain-killers to ease my thumping head. He suggests a trip out to the Neolithic passage grave nearby to get some fresh air and inspiration.

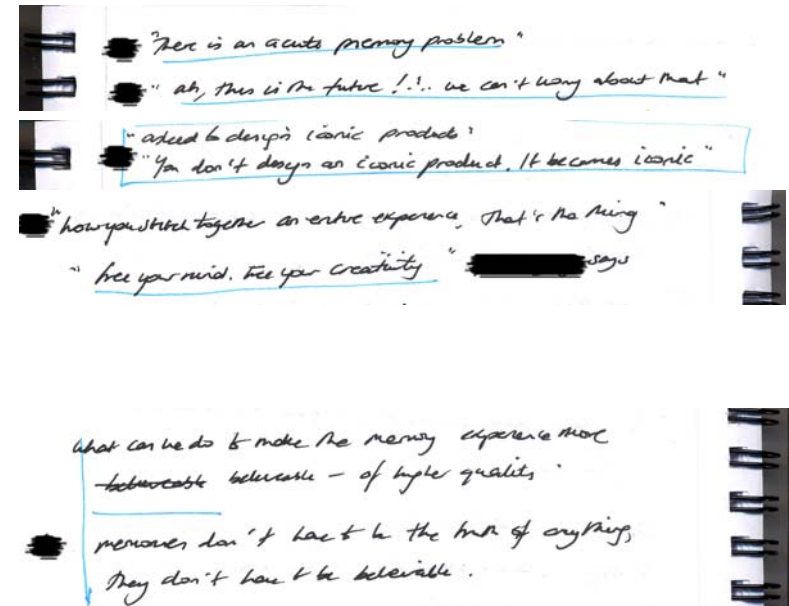
We all stumble around, pulling on our shoes and boots at the door. Feels like a school trip. It's barely half a mile along a quiet road and everyone wants to walk, even though the sun is setting rapidly. Simon volunteers to go on ahead to check that we can take over the monument (at this time of year there are few tourists).

I am walking besides Anne, listening to the others chat amongst themselves as we pound the tarmac.

"[We've been] asked to design iconic products," Olaf is muttering, "[but] you don't design an iconic product, it becomes iconic."

"How do you stitch together an entire experience? That's the thing." says Richard to everyone.

"Free your mind. Free your creativity." says someone else.



"What can we do to make the memory experience more believable, higher quality?" asks Keith.

"Memories don't have to be the truth of anything, they don't have to be believable." says Richard, swiftly.

We arrive at the grass mound of earth and stone, almost a miniature Sand14, itself visible on the far side of the fields. But access to this four thousand year-old mound is through a long, low stone passage down which we must file, bent double, eyes staring against the sudden darkness.

The centre of the monument is a large square, stone-cooled room, in which we can all stand and stretch, the corbelled roof spiralling up above our heads. Simon has switched on the electric lights, but then switches them off again. In the near-dark we can see the light of the world outside as a shaft of rich, gold dusk down the passageway. I feel cut off, in another world, reaching down the shaft of light to what lies beyond. As I write my fingers tingle.

"How to create an experience for your senses?" Simon is excited by the formidable effect before us. "It's the qualitative part of what participation it all about."

Olaf is with him. "The deep immersion of Hollywood content, with Dolby and a forty-two inch screen. How to bring the same kind of immersion for virtual experience?"

Olaf is scribbling something in a small notebook, which he passes to Richard.

"From voice to rich communications, what barriers do we need to overcome?" Simon, again.

"What's the real secret to this multimedia communication?"

"What's the magic that will make participation really work?" Richard is asking Olaf. "The magic of participating is crucial," he adds.



has to create an experience for your senses

It's the qualitative part of what [redacted] is all about.

"The deep immersion of Hollywood content, with Dolby.. 42" screen. How to bring the same kind of immersion for virtual experience... [redacted]"

from voice to rich communication

what barriers does need to overcome... [redacted]

* what is the real secret to this multimedia communication, actually.

What is the magic that will make [redacted] really work?

Magic of [redacted] is crucial. [redacted]





Simon and Keith are in cahoots with the stub of a pencil and folded scrap of paper, they show Richard. "Ah, Yes!" he says, hands waving in enthusiasm.

Simon pulls out a videocamera from his bag, starts taking footage of the shaft of light from around the room; orders us around the space. Then he leaves, running to get back ahead of us. We follow him out slowly, mostly silent. The sun is now behind the hills, the sky red and orange fire, an extraordinary light.

Feels good to get back into the warm library back at Sand14; mugs of tea all round. Simon appears triumphant with four video cameras and an extension cable. He organises the cable and places the cameras orthogonally around the carved stone ball, round lenses to each rounded end, eye pieces jutting out along the of sight. He folds up some of the schematic pages beneath the stone to get the height of the ball to the camera lenses the same. The cameras form a cross, with the stone ball as the nexus through which they appear to be directed. The carved stone ball has been transformed into a mobile video concept.

The room is hushed. Simon and Keith, with a hand on each camera, press four Play buttons in synch. Then they peer into each one of the viewfinders in turn, watching the queued-up video. Anne comes up to take a look, carefully resting her hand on the stone ball as she looks into the cameras. She nods, and pushes her glasses back up her nose with a wink at me.

I am the last to try. Through each of the cameras I see a view of the inside of the passage grave, as though I am looking into its centre from the four directions of the cameras. It is as if the room has been shrunk into the carved stone ball, and I am looking through the circular nodules into its memory of light and shadow. The ball has become a miniature world, caught for a brief while; a time and place frozen in stone. Placing my hand on the stone as I look into it, into the chamber where we were only a few minutes before, I can imagine throwing the ball over to someone else, for them to look, to record another place, to leave the ball buried in a box for another generation to uncover and experience.

I stare at the cameras and stone that represent a future of the mobile telecoms industry, a future as created by these people at this moment in time, in this company.

Epilogue

Those were two ethnographic accounts of a practice of future-making in the mobile telecoms industry. Yet both were empirically founded on a shared set of evidence. Neither are fiction. And neither are they true. These are stories woven from hard evidence on the basis of a rigorous methodology, although not all the moves can be presented here¹². The multiplicity of accounts is an archaeological effect of the excavation of my fieldsite, which exists only as strata of memories, materials and artefacts. My hopes for the effect of this archaeology of the future are many:

Firstly, as a generative project, I hope to make an interference in the futures of the mobile telecoms industry. To present other possibilities rather than the "...we all said the same..." stories, suggested by the Venture Capitalist at the beginning of this paper. By contrasting very particular aspects of future-making, here I focused on the games and playfulness associated with the design a mobile video concept, I hope to make it clear that futures are made, that they are effects, and that how and where futures are discussed and told makes a difference to what is made. The diverse settings of these accounts is an explicit move that emphasises the diverse effect of differently situated actions.

Secondly, I hope to explore the effect of a poetic and imaginative approach to empirical practice. The writing style of a piece determines what may and may not be expressed, and who may read it. Poetics affects the possibilities for empirical practice and political interferences. In Science and Technology Studies much of the focus has been on the work of scientific prose and the public understanding of science. However, I am interested in exploring the literary enchantment of writing technology, to borrow slightly from

¹² For the full methodology, including the introduction of the figure of the Future Archaeologist, see my thesis: A future archaeology of the mobile telecoms industry.

Alfred Gell¹³ - when the words fade from the images and experiences that they conjure. In particular, how might such magic aid a political project of interference in the mobile telecoms industry? In essence, how might narrative enchantment be an integral part, not merely of ethnographic accounting, but of ethnographic interference?

Simply, these stories are an excavation into the future. They are stories of future possibilities, enchanting, empirically woven from shards of evidence. They are stories from a future archaeology of the mobile telecoms industry.

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¹³ Alfred Gell discusses, in depth, art as a technology of enchantment, and it is this theory of art and agency that I am referring to here but do not have the space to expand on. See Gell 1999.