ANTHRONOTES™

MUSEUM OF NATURAL HISTORY PUBLICATION FOR EDUCATORS

VOLUME 32 NO. 2 FALL 2011

UNPACKING CARS: DOING ANTHROPOLOGY AT INTEL

by Genevieve Bell

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[Editor's Note: Genevieve Bell, whose PhD is from Stanford University, is a senior cultural anthropologist at INTEL, working on the anthropology of technology and its uses. Here she describes her latest research project, designed to understand how cars around the world can serve as windows into the future of mobile technology and computers.]

Unpacking Frank's Car

I am always happy to be back in South East Asia – it smells like home, or at least one version of home. I lived briefly in Indonesia as a little girl, and later in Darwin, on Australia's far north coast. The particular combination – frangipani, diesel, rotting vegetation, with a hint of durian and the promise of something remarkably tasty being cooked on the next block – holds a special place. On this trip it was Singapore and Malaysia. I was travelling with a colleague and fellow anthropologist, Alexandra Zafiroglu, and we were eager to get started.

At 9:45a.m. it was already hot in the sun. The humidity was rising too, and the sweat was dripping down the backs of my knees. Alex and I were standing in the courtyard of one of Singapore's many high-rise apartment complexes. We were taking in the guard house, the electric gate, the pink blossoms floating on the blue tiles of the swimming pool, the sign that says "no smoking, food, drinking, floats, toys, and snorkeling," the blue-uniformed man sweeping the underground car park clean with a bamboo broom, and the woman slowly cleaning the cars and flicking the wind-screen wipers up – a sea of wind-screen wipers jutting off their windows marking her progress.

We were waiting for a Chinese-Singaporean man in his forties whom we will call Frank, who lives with his wife and three young children in an apartment near us. Alex and I were both dressed modestly – we have done fieldwork in South East Asia before and know to dress conservatively, to wear shoes you can easily remove when entering people's homes, and to dress in layers to cope with the shifts between air-conditioning and the amazing humidity of the equator. We were also weighed down with gear – digital cameras, notebooks, digital recorders, and a step stool – not part of my usual field kit but Alex had insisted, and she turned out to be right.

Frank had a new car – a three-week old white Volvo SUV that he bought during Chinese New Year when his old car was damaged in a parking accident. He described the purchase of this car as inspired by omens and made possible by fate. As an imported European car, it was also a sign of his increasing status and success. It was a shiny new car that we found in the parking lot, parked nose out, carefully distant from a concrete support pillar. It still smelt new, and the interior seemed pristine. We wondered what we would find when we began to excavate. We were there to empty out Frank's car and catalog its contents, tracing the flows of technology in

and out of the vehicle and trying, if we could, to get a sense of how this car is inhabited.

The Stuff

Slowly, methodically, working from front to back, we emptied every surface and compartment – the glove-box, the side door pockets, above the mirrors, on the dashboard, the console between the front seats, under the seats, behind the seats, the back seats, and the trunk compartment. Everything went on the ground cloth we had spread out nearby—actually a shower curtain in a nice neutral tone that we had brought along expressly for this purpose. Frank then went through each item, described what it was, and why it was in his new car.

When we were done, it was an impressive collection of stuff. To get the entirety of the ground cloth in the photograph, I needed to stand on the step-stool Alex had carried all the way from our offices in Portland, Oregon. In that picture, you can see a set of golf clubs, 6 full-sized umbrellas, 2 iPods, several pairs of scissors, pens, calculators, four pairs of sunglasses, piles of compact discs, DVDs, wet wipes, tissues, credit cards, parking coupons, maps, several bags of shoes, shoe bags, a Bluetooth® headset, remote controls for the in-car DVD players, wireless headphones, Volvo branded *ang pao* (red 'lucky' envelopes for monetary gifts), gift certificates, loyalty cards, batteries, air freshener, a forgotten week-old package of fish sausages, sun visors, sun shield, manuals for everything electrical in the car, grocery bags, spare keys, batteries, membership cards, a detachable GPS unit, water bottles, kids' toys, a tiny Buddha from Frank's mother, note pad, candy, chewing gum, anti-slip pads on which the Buddha and tissue boxes rest, quick start guide for DVD player, a towel, hand sanitizers, a car-trunk organizer, a chiller bag, Malaysian immigration forms and an expired parking access coupon for the Formula One car races.

Surveying his car's contents laid out on the ground, Frank laughed somewhat ruefully: "It is more than I imagined," he said. And it was more than we imagined too. After all, this car was only three weeks old, and it seemed so empty when we first opened the doors to inspect the interior. In the days that followed, we would unpack other cars in Singapore and the Malaysian city of Penang, and find that most shared this capacity to unfold far more stuff than was visible on the surface. It was always very exciting.

Cars as Field Sites, Cars as Mobile Technologies

So why are we unpacking cars? And why is this anthropological? And why might we be doing this for Intel? There are more than 800 million cars currently on the world's roads, representing a significant investment of resources, including the larger fiscal demand of building and maintaining road infrastructure. Furthermore, cars are a significant site of human activity. The amount of time we spend in cars is surprisingly long and shaped by myriad factors – location, occupation, culture, age, gender, fuel pricing, weather, road conditions, and government regulation. In America, the average citizen spends between two to three hours per day in a car; in Australia, it is closer to two hours; in Malaysia and Singapore, it is less than one hour. Not as much time as we spend sitting on our sofas, or sleeping, or at the office, but still enough to be a significant part of our days. Commuting, after all, remains a highly stressful part of any working day.

But why might cars be interesting to a technology company? As it turns out, in recent years, cars have become increasingly technological spaces. In addition to the built-in technologies like automatic braking and air-bag sensors that ensure performance and safety in ways mostly invisible to drivers and passengers, a proliferation of in-vehicle systems explicitly targets occupants. These systems provide entertainment, way-finding, and clear visualizations of previously hidden functioning (ie: petrol consumption, mileage, battery life, outside temperature, etc). The average passenger vehicle contains more than forty pieces of discrete microprocessor control modules; these electronic components account for more than forty percent of the car's production cost. Not surprisingly, automobile manufacturers have developed sophisticated visions about future "smart" cars that can serve as mobile living rooms, full-function home theatre systems, and proactive computer environments.

And why is it anthropological? For all the cars on the world's roads, surprisingly little social science research is dedicated to making sense of them, or to exploring the tensions between cars as designed and cars as inhabited and embodied.

Some anthropology looks at cars as forms of transportation and also as important sites of identity work, as potent symbols of modernity, wealth and other cultural registers, but there is almost nothing about what is inside cars. We wanted to see cars with fresh eyes and to think about them as field sites in and of themselves. We started with some very simple questions: what is a car, what does it mean to own a car, to use one, to care for one. Armed with a very basic set of tools we set off to interview car owners and users in the US, the UK, Australia, Singapore, China, Malaysia, and Brazil. We wanted to see what people carried with them and to understand how cars functioned as sites of technology consumption and human activity, and how they became imbued with meaning.

The Making of an Intel Anthropologist

As much as this unpacking of cars makes sense as a research project, it is unlike anything we had done before at Intel. I have worked at Intel for a long time, and I like to push the boundaries of our research. When people find out I work as an anthropologist at one of the world's largest technology companies, there are usually two questions: how did you end up at Intel, and what exactly do you do there? The first has a deceptively simple answer– I met a man in a bar in Palo Alto in 1998 who introduced me to the world of anthropology in the high-tech industry. In a very Australian moment of self-invention, I realized I could step off the tenure track into a world about which I knew nothing but which promised great adventure and greater possibilities. The second answer follows from the first – I have been lucky enough to carve out a job doing what I love and making it count.

It should be said, however, that I did not always intend to be an anthropologist, let alone an anthropologist working for a large global technology company. My mother is an anthropologist, who came to it later in life, and as a result I grew up in the anthropology departments of Monash University and the Australian National University. She jokes that I was kicked out of my first anthropology class – an introduction to social organization – when I was four:

matrilateral cross-cousin marriage should not come so easily to a pre-schooler. I spent my other formative years in a series of Aboriginal communities in Central and Northern Australia as my mother did fieldwork, worked for various governmental bodies, and ran her own ethnographic consultancy, before returning to a research position in the Australian university system. I grew up around anthropology and anthropologists who pushed the boundaries of the discipline and worked hard to make it meaningful in many different circumstances.

Beginning with the likes of James Mooney, one of the first anthropologists on the payroll of the United States government in the late nineteenth century, stretching forward to the current debates around researchers embedded within the US military, anthropologists have long sought and frequently found ways to make interventions into non-academic institutions and thus meaningfully impact daily life. Indeed, in both America and Australia, the traditions with which I am most familiar, anthropologists have always worked across institutional boundaries and borders and answered to a range of masters and causes. Some people describe this work as applied or practicing anthropology. I am not sure that the gloss of "applied" or "practicing" anthropology fully captures the work that I or my team does.

Evolving Anthropology at Intel

In the 1990s, Intel was just beginning a long period of reinvention from a pure semi-conductor manufacturer to an enterprise more involved in the build out of the digital world, a period ongoing today. The impulse to hire social scientists generally, and anthropologists in particular, arose as the markets that Intel had traditionally served changed and grew beyond recognition. Since the late 1990s there have been teams of social scientists at Intel doing different kinds of research. In the early days, our role was pretty straightforward: help educate Intel engineers about life beyond the building. This meant helping to interpret the complexities of cultural and social practices and the ways in which those practices might shape people's relationships with technology, as well as people's patterns of resistance, rejection, adoption, and creative re-use. We did quite conventional multi-sited ethnographic inquiry. We looked at emerging middle-class households in urban Asia and their complicated relationships to new information and communication technologies. We studied health-care providers in homes and hospitals and mapped their uses of digital and analog devices. We studied classrooms and televisions, teenagers, and families with small kids. We had a core team of researchers at Intel's advanced research and development laboratory, and over the years we moved out into the product groups, always retaining a strong charter of driving a more human-focused company. We channeled Ruth Benedict 's lovely notion that anthropology's real job was to "make the world safe for people."

My new research group at Intel – Interaction and Experience Research – is comprised of nearly one hundred researchers, from ethnographers and interaction designers to computer scientists and physicists. We are charged with reinventing how we all experience computing. As Justin Rattner, my boss and Intel's Chief Technology Officer, likes to point out, we are "already late." By which he means, our relationships with computing are long overdue for an overhaul. We have a strongly interdisciplinary approach that shapes everything from our framing questions, to the projects we tackle, to the ways we choose to share our thinking. Currently we are exploring changing notions of story-telling and social participation, as well as charting the shift in the usage of cameras, phones, and televisions, and hacking the latest screens, printers, and sensors to see what we can make with them. And we are continuing to do research with a comparative and global focus – Brazil, Germany, Indonesia, China, India, the United States have all been field sites this year.

The challenge has always been how to present our work back at Intel. How can we best take those rich textured rhythms of daily life and render them vividly in an engineering culture. Interestingly, it remains one of the hardest parts of my job and, in many ways, the most intel-

lectually compelling. In my current research group, we experiment with photography, images, web-pages, text, sound, performance, ambient disruptions, presentations, installations, poetry, reports, books, and science fiction. In conjunction with designers and engineers, we attempt to generate technology designs and prototypes that convey an important idea or sensibility. We try to reframe the questions. We do not ask what will make people more efficient, we ask what will make them happier, what they will love, and then design accordingly. We try to change the process by which technology is designed and developed, not just the technology itself. We try to find ways to bring the voices of everyday people back into the process of thinking about and designing technology.

Cars as Contested Spaces: What They Tell Us About Technology and Culture

So, back to Frank and his car's expansive contents. The notion of "excavating" cars as an archaeological metaphor came unbidden to Alex and me one afternoon in a drab, grey Intel conference room – we were riffing on research methods and wondering what came after television – something we had been studying for years. I wanted the research group to start tackling cars as a site of technology consumption. It was a place where we had not spent any real time; it seemed to be where technology was going, led by the people we had been studying. It was also a methodological challenge for cultural anthropologists. After all, it is a little tricky, at least at first blush, to take a car's genealogy or work out what participant observation might look like around a daily driving commute. But I liked the possibility of disruptive images for Intel's senior leaders – the contents of many cars that did not echo their experiences but that in an accumulation were somehow unassailable. Alex actually knew enough about doing archaeology to be dangerous. The work also drew on post-processual archaeological theory and the idea of tracking the traces and flows of objects in and out of space, which we reasoned might have particular resonance when it came to cars.

So what do the contents of Frank's car tell us – as researchers, as developers, as experience designers, as technologists – about socio-technical practices and the possible directions for computing? The presence of all manner of creature comforts – movies, music, tissues, scent, spiritual protections, food, and candy – reminds us that we spend significant time in cars, engaged in all manner of activities beyond strictly getting from point A to point B. Cars are also – quite clearly, as judged by their material debris – a rich interaction space: we spend time sitting together with close family members, friends, and other social acquaintances. Beyond their function as a social space, cars appear to operate as a staging point for activities – recreation, exercise, work, recycling – and also as a form of extended storage – golf clubs, loyalty cards, donations, and umbrellas. Viewed this way, the contents (and indeed all the other cars we have excavated too) point to the ways in which cars serve as important sites of human activity and cultural practice, and as such warrant further attention.

In all our excavations, it also quickly became clear that cars are already and always have been sites of personal technology consumption – phones, Bluetooth, headsets, music players, mapping systems, portable DVD players, etc. Cars function as sites in which a great deal of technol-

ogy rests – some of it built into the vehicle (i.e., in-vehicle information and navigation systems), some brought in and out of the car daily (i.e., mobile phones and laptops), and some that has found its way into the car and never left (i.e., chargers, SIM cards, digital music players, navigation systems). This means cars are full of cables, plugs, batteries, and non-manufacturer's parts and accessories, together with modifications to make these technologies work inside a car. It all felt a little *ad hoc* and unsettled.

Indeed, our conversations with Frank and other drivers, owners, and occupants of cars, made it clear that cars are a contested space when it comes to new technology. What makes sense to bring into a car, to leave in a car, or to install in a car – all are still being negotiated. This negotiation is impacted by many factors – legislation, social regulation, guilt, perceptions of safety and crime, urban density, parking structures, commute time, just to name a few. As such, imagining and designing technologies for cars, for technologies to be used in cars, and for the worlds that cars will inhabit is a more nuanced undertaking than many imagine.

Cars: The Future of Computing

Listening to Frank talk about his car, I was struck by the fact that cars are so much more than forms of transportation. They are, in point of fact, highly charged objects. They say something about who we are and who we want to be. They are also part of much more complex systems, ecosystems, environments, and imaginations. In this way, cars resemble many other contemporary technologies: our smart phones, laptops, even tablets and e-readers. Standing on Alex's step-stool with all of Frank's stuff on our shower curtain, I realized it was easier to excavate a car than a smart phone, and that in so doing, we might have found a window into the future of mobile technologies and computing.

Acknowledgements: With thanks to Alexandra Zafiroglu and Tad Hirsch, my partners-in-car-unpacking crime; Brian David Johnson and the rest of my team in the Interaction and Experience Research Lab; Katrina Jungnickel, Carolyn Anderson, and Alistair Kemp. We have changed the names and details of our research participants to protect their privacy.

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