ICT4D => ICT4X: MITIGATING THE IMPACT OF COGNITIVE HEURISTICS & BIASES IN ETHNOGRAPHIC BUSINESS PRACTICE

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With more than five billion people, large corporations have expressed non-trivial interest in "emerging markets" as potential future sources of revenue. We in this community of ethnographic praxis, are privileged to move with some ease between corporate board rooms and people's living rooms around the world. Yet, our messages and meanings that might lead to positive action are hampered by both our own language – that of development -- and the ways in which people hear our language through specific cognitive heuristics and biases. In this paper, we specifically unpack the prevalent business interest concerning the "digital divide". We discuss how that particular framing, i.e., digital, divide, essentializes upwards of 85-90% of the global population as simply poor and living in developing countries limiting business engagement. We argue that these predilections are further magnified by specific cognitive heuristics and biases we all posses but which are especially powerful amongst the business elite and which must be overcome to be effective. In response, we introduce an alternative scaffolding based on exchange rather than development, a view grounded in Simmel's simple and powerful notion of "exchange". In the example of development, which we use in this paper, we argue to reposition ICT4D (ICT for Development) to ICT4X (ICT for Exchange). We suggest this repositioning reshapes the possible actions for business possibilities and opportunities, shifting the conversation from hand-outs to business ventures, an otherwise well understood construct.

BACKGROUND

The term "digital divide" typically represents a division between those with and those without access to information and communications technologies (ICT's). It is implied that having said access is beneficial such that without access, one is disadvantaged. Many have subsequently made the rather obvious point that the *digital divide* is really the visible, cumulative effect of many smaller divides, like access to education, infrastructure, language, jobs, etc.

From the outset, at the UNICT Task Force with Kofi Anan's statement that "ICTs are good for development" the *digital divide* has been linked to the traditional language of *development*. That is, the concepts of *digital divide* and *development* have been inextricably linked. Development was multilateral organizations; development was non-governmental organizations; development was philanthropic charities that advertise on TV. Development was about giving away money, not about making money; development was not business.

> *Being Heard Note 1: In 2001, two of the above ethnographers responded to Anan's phrase: ICT's are good for development, by asking: a. are they, b. if so, how and c., if so, what's in it for Intel? They began talking about their work by referring to it as an investigation into the digital divide. Uniformly, every manager and employee they talked to asked: "Why are you doing this? Intel isn't a philanthropic organization." (Working at Intel, it doesn't take long to realize Intel isn't a philanthropy…so they of course knew their work wasn't about philanthropy. Turns out at that time about 10% of the planet did have access to ICTs and that corresponded to about $30 billion US revenue dollars a year. They changed the name of their project to "The Next 10%" because "that sounds like revenue."*

But Anan wasn't finished. He further implicated Industry by saying that Industry had to show "us" the way. That is, in a deft move, he linked Industry to development – the thing Industry wasn't so interested in. (He probably thought that was very clever – co-opting industry on an international stage like that; I suppose that's what it takes to be Secretary General of the United Nations.)

About this time, Stuart Hart, Allan Hammond and C.K.Prahalad began writing about what they named: "The Bottom of the Pyramid". They argued that there are bona fide business opportunities amongst 4 billion of the "poorest" people on the planet. The oft cited example was the success Unilever Hindustan (in India) had repacking large boxes of laundry soap (too large a quantity to be affordable) into small "one wash" sachets that were affordable. (More recently, the World Resources Institute has published "The Next 4 Billion: Market Size and Business Strategy at the Base of the Pyramid", which is an attempt to quantify various markets at for those 4 billion people; a welcome step.) While we accept that there are those without access to ICT's, we are less inclined to assign them as *divided*. Division assigns a sense of "otherness" to people who are otherwise not "other" in this way. Dividing separates, by definition, into parts, sometimes equal parts, more often than not, unequal parts. As a side note, some might posit that sowing division is even immoral.

> *Historical Note: Dante Alighieri wrote about the hell in the early 1300's; at least the Italian version. Perhaps not surprisingly, hell is hierarchical, not unlike a corporation, except that the "CEO" is at the very bottom, not the top. There are nine circles of hell; some have various layers called bolgia. Circle 8 (lower than circle 7, and hence closer to the CEO), Bolgia 9 (out of 10) contains "the sewers of discord". As punishment for sins of division, some wee devil hacks the bodies of these poor souls; they heal; repeat.*

In summary there are two framing narratives related to the "digital divide" as relative to the "market": Business at the "Bottom of the Pyramid", and "ICTs for Development"

(ICT4D)". Relative to high tech multinational corporations, neither resonates particularly strongly in the context of the business (product and service) interests. Computers can't be simply packaged as "soap products" and development sounds too terribly much like philanthropy to be about business.

THE LANGUAGE OF DEVELOPMENT IN BUSINESS

Craig Barrett, the current Chairman of the Board of Intel Corporation has run one of the world's most profitable corporations, making products of dizzying complexity (microprocessors) in a highly competitive market, undergoing constant, rapid change. Here's how Dr. Barrett talks about the United Nations Global Alliance for ICTs and Development, which he chairs:

> *Rhetorical Note 1: "Last year, I've traveled to more than 30 developing countries to witness how rural areas are benefiting from technology. In my trips, I've also experienced how private and public organizations can collaborate to amplify opportunities created by technology in the developing world. That is why we organized a summit with the U.N.'s Global Alliance for Information and Communications Technology and Development (U.N. GAID) to meet with Silicon Valley leaders. Our shared objective for the summit is to come up with solutions that can speed the delivery of technology to the 4.8 billion people who don't have access today. The summit was designed to foster collaboration and, more importantly, create action to bring technology to countries around the world." – Craig Barrett, Chairman, Intel Corporation[1]*

The above is fairly typical rhetoric regarding ICTs, development and the digital divide especially amongst the business and multi-lateral elite. It's standard fare. In this section, we address why Dr. Barrett - *and others to be sure!* - specifically address these topics in these ways. Consider the following contrasting framing:

> *Field Note 1: Jose Miguel's family, members of the Cañari indigenous community in the Ecuadorian Andes, lives at 11,000 feet, in a small community, in a mud-brick house. It looks like this here. They had some land for farming – for themselves and some to sell. Like every other farmer, they sold the commodities in the same locales; hardly an income that will grow. Jose Miguel wanted to study agronomy. He wanted to learn modern agricultural techniques and apply them to his community. While many of his cohort were leaving for North America, Jose Miguel wanted to stay and help. In a stunning decision, Jose Miguel's father sold his land to send Jose Miguel to Rio Bamba University in central Ecuador. The land meant everything. It was all he owned. (Today, Jose Miguel is married, two kids, has a house, has presented his work at Intel Corporation and has received a Smithsonian Fellowship, amongst other endeavors.)*
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> This is Jose Miguel's framing. He describes how his father made a business decision to invest in Jose Miguel as the future for the family. Imagine the colossal risk: sell everything,

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[1] http://www.intel.com/intel/citizenship at the time of the original draft

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with no other way to earn income to invest in an 18 year old soccer playing, guitar strumming boy. Even a responsible one! Anything can happen – he could get hit by a bus. He could simply fail. Imagine.

None the less, in America, we have phrases for this very sort of risky business venture: "bet the farm", "bet the house", "bet your life", "bet your salary". In fact, we at Intel Corporation have a history of "bet the farm" decisions. Andy Grove, the storied CEO and Chairman of the company wrote about many of the "big decisions" he and his cohort made that "bet the company" – monster decisions infused with risk in markets where variability cannot be controlled.

Jose Miguel's father made a business decision – a risky one – but nonetheless a business decision. And yet, we corporately see Jose Miguel through the lens of development. Let's re-consider Dr. Barrett's fairly standard statement:

> *Rhetorical Note 2: Last year, I traveled to more than 30 <u>developing countries</u> to witness how <u>rural areas</u> are <u>benefiting</u> from technology. In my trips, I've also experienced how private and public organizations can collaborate to amplify opportunities created by technology in the <u>developing world</u>. That is why we organized a summit with the U.N.'s Global Alliance for Information and Communications Technology and <u>Development</u> (U.N. GAID) to meet with <u>Silicon Valley leaders</u>. <u>Our shared objective</u> for the summit is to come up with solutions that can speed the delivery of technology to the <u>4.8 billion people who don't have access today</u>. The summit was designed to foster collaboration and, more importantly, <u>create action</u> to bring technology to <u>countries around the world</u>. – Craig Barrett, Chairman, Intel Corporation*

In this reading, *Silicon Valley* has "leaders" "creat[ing] action" to do something for "[developing] "countries around the world." The other 4.8 billion people "don't have access" and are "developing". This is the language of business – the language suggested by economists who first organized the "emerging markets", by Kofi Anan who linked ICTs and development, by Prahalad who's called out the four billion people as being "the bottom of the pyramid". It's also the language many researchers and non-profit organizations have adopted as well. Why is this?

COGNITIVE BIASES & HEURISTICS

In essence, those global citizens who comprise the digital divide have largely been reduced to a single word: poor, and their nations as: developing. From these two words spring forth the rhetoric of the "digital divide" and "development". Yet, from even a cursory view, it would seem unlikely, somehow that such large swaths of the global population would be reduced to these one-dimensional turns of phrase.

One candidate explanation may be due in part to a reliance on what are called cognitive heuristics and biases. In general, a heuristic is a simple, effective "rule of thumb" that people use to live their everyday lives. For example, one might be: you can always go 5 miles an

hour above the speed limit and not get a traffic ticket. Heuristics have likely developed over the long span of human existence as a cognitively efficient means of achieving most of what we need to achieve to survive and reproduce. Much of the time, these heuristics work just fine. But there are some that lead to systematic errors in judgement and decision making. We shall discuss one such heuristic in a moment.

Cognitive biases are human behavioral traits that result in interpretations of the world falling outside the bounds of objectivity. A simple example is the well known "confirmation bias", in which people tend to seek for or interpret information in ways that confirm their own suspicions, desires or predictions. This would be in contrast to the far more efficient strategy of disconfirmation, in which one should seek key bits of evidence to negate a reigning supposition. The classic example by Karl Popper relates to swans. All swans are white. Seeking ever more white swans is easy, but does not prove the premise as one black swan is all it takes to refute it. Kahneman, Slovic & Tversky (1982) were the first to systematically examine both cognitive biases and heuristics and their for which Kahneman won the Nobel Prize. (Tversky was deceased at the time and Nobel prizes are not awarded posthumously.)

For the purposes of this work, there are two culprits conspiring to relegate 4.8 billion people as both *poor* and living in *developing* countries. The first is known as the *availability heuristic*. The availability heuristic suggests that people tend to draw conclusions about the probability of some event based on what they are able to call to mind most easily, very often, what they've heard, seen or come to know most recently and repeatedly. A really good example in the US relates to the probability estimate of children being abducted. The probability is stunningly low compared to what people estimate. This estimation is based largely on the spectacle of child abductions in news media, which yields the impression that child abductions are far more common than they are. For our purposes, that the only vision of *developing countries* often concerns the *poor* and needy yields an estimation that they are all simply poor and needy in developing countries. Hence the ethnographic "surprise" when we show the image of Jose Miguel's mud brick home, his meager room with newspaper tacked to the walls and ceiling to slow the falling of mud dust, and a computer sitting on a desk. We shall return to this point in a moment.

The second phenomenon to discuss is referred to as the outgroup homogeneity bias. A bias occurs when heuristics routinely lead to systematic errors in decision making and judgment. Quattrone & Jones (1980) identified this particular bias in which members of one group consider themselves as more varied and more individual than members of other groups, which they actively consider as more homogenous. That is, men consider themselves more varied than women, the latter of whom are more similar as a group, i.e., less varied. Not surprisingly, women feel the same way about men. Boys about girls, girls about boys. This is all very amusing at a cocktail party or in the high school lunch room. However, it turns out that Americans will presume homogeneity of the French, the French about Americans, the rich about the poor and the poor about the rich. Perhaps more pointedly, citizens of developed nations will consider that citizens of developing nations are all the

same. Thus, people in developing nations are all much more homogenous than people in developed nations: they're all poor; and activities in developing nations is about *development*, *per se*, and it simply can't be about business because they're *all* poor.

The availability heuristic and the outgroup homogeneity bias may well work together, each magnifying the effect of the other. The ever prevalent news media portrays people in developing countries often in disasters or in terms of humanitarian crisis – genocide, drought, famine, etc. The media does not often portray everyday life, such as buying vegetables, using transportation, playing sports, engaging in business, going to the shops, working, or any of various other humdrum activities that are certainly available to the local people but are not of nearly enough interest to air in the media. Thus, what multinational business people see – and have available to them, repeatedly, daily -- are the media reports of war, famine, drought, etc. And since this is all we see about *them*, we assume homogeneity.

Thus, the availability heuristic and the outgroup homogeneity bias each magnify and reinforce the effect of the other, triangulating if you will, toward the solidly held position that is it only the *poor* who live in *developing* countries which are developing because they are *poor*. That they are poor and developing suggests, of course, that they don't have access to the wonderful technologies available to us. In but a short, albeit ironic, turn of phrase, the *digital divide* reifies the boundary separating *us* from *them* in ways that have ultimately separated and largely isolated business from philanthrophy, and *exchange* from *development*. In our last section, we discuss shifting our language from that of *development* to that of *exchange*.

EXCHANGE

In the first two sections, we outlined the rhetoric of digital divide and the concepts of the availability heuristic and the outgroup homogeneity bias. In this section, we examine Simmel's concept of exchange as a means for escaping the rhetoric of divide and overcoming the systematic errors that result from our unfortunate reliance on these heuristics and biases. In the final section, we argue to change our own language and rhetoric – especially in business settings -- from that of the *poor* and *development* to that of *society* and *exchange*.

Georg Simmel defines exchange such that each party in the transaction must give up something meaningful (a sacrifice) in the expectation and hope of receiving something more meaningful, i.e., of more value, in return (Simmel, 1907). In other words, everyone needs to give up something to get something better. In colloquial American English: "give a little to get a little". Simmel's philosophy posits that it is exchange that defines society, specifically when "…individuals enter into interaction". It is in the *exchange* that society is manifest; all societies by definition therefore exhibit exchange.

From a business perspective, our challenge is to determine viable mechanisms of sustained exchange over time to form mutually supportive societies, which we might refer to as markets, or market societies. McMillan, in a recent business book, *Reinventing the*

Bazaar, refreshingly quotes Simmel, and argues that markets – defined by the conduct of exchanges of this nature – are many, varied, dynamic and ever flourishing – perpetually finding new and innovative ways to conduct exchange. And technology is a prime catalyst for creating new means of exchange.

> *Field Note 2: Matyas Gaspar is the founder of Hungary's Telecottages (in Hungarian: Telehazak). A telecottage is a form of community telecenter designed to support people living in rural towns, mostly for economic growth and to foster business opportunities. The genius of Gaspar's telecottage isn't the technology; it was the legal and operational structures he designed into them. The business model for the teleház has three legs. Each is sponsored by a local nonprofit civic organization, created by the local government explicitly for the teleház, and by an independent for-profit operator. The official owner is the civic organization; the local government supports the enterprise with either a building or land or some other resource. The operator who runs the business profits through a variety of means, such as charging for the computer time used in playing games or in searching the Web. The operator also writes grant applications for community members and gets a fee or a percentage of the grant if it's accepted. (Grants are offered by the national government.) Of particular relevance is that though this structure was common across all telecottages, the specific role of each telecottage varied depending on the town and the wishes of the people, e.g., one became the hub of an art and tourism industry in Western Hungary. One focused on encouraging and growing strong local small businesses. One, which earned income, supported a second in a neighboring town that became a non-alcoholic social center for the youth from both towns. Additionally, computing and connectivity enable the operators in the telehaz to work effectively with the government, searching the databases for grants, applying, transacting.*

Gaspar set up the telecottage system specifically to encourage and enable exchange. The tripartite model was determined to permit each of the three entities to take maximum advantage of tax and sales laws in Hungary, e.g., civic organizations get certain discounts, while individual owner/operators have more latitude in conducting business. Additionally each telecottage was designed – indeed encouraged – to support and grow locally relevant businesses and therefore establish their own ecosystems. The first 30 telecottages were initially funded with a grant to overcome the initial hurdle of startup capital only and they were subsequently on their own.

Locally meaningful models of exchange emerge locally, amongst local people familiar with the social, cultural, economic and political milieu. To the extent that technology can be locally appropriated to foster new models of exchange, the probability is higher that is will be. Had Hungary been subjected to a "standard" telecenter funded and deployed not unlike the cinderblock loo's in Cañar, one ventures to suggest they would not be viable now.

Global models have a lower probability of working locally because the exchange model is inappropriate. That is, people don't want what's on offer enough to give up something meaningful, whether it is time, money, labor or barter. Further the cause may not be due to the actual exchange model, but the way in which that model is embedded into the local political economy. In a similar vein, recent work has also suggested that capital inflows in the form of Foreign Direct Investment and in the form of grants does not correlate with

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increased access to or use of ICTs (Heinsz, et al, 2005). In recent work by Howard (2007), where he looked at five indicators of "digital dividedness", international trade, measured as the proportion of a country's GDP coming from imports and exports, has a small *negative* impact on these indicators. That is, sustainable adoption of ICTs locally seems to be driven by local economic cycles, not global ones. Put another way, raining money and material from the sky without a firm linkage to locally meaningful models of exchange may be worse than doing nothing in that it inhibits locally driven growth of exchange models.

In a second example, we approach from a different perspective. Here, we find individuals adopting technologies of their own accord, without active planning of the sort in the telecottage example, but where the benefits were clearly about the ability to exchange information, time, knowledge and money.

Field Note 3: Ilahiane (2003) studied a group of small craftsmen, laborers and assorted small businessmen operating out of the souk in the Moroccan city of Casablanca. The men were bound by ties personal and business ties. They'd known each other for years, played soccer together on regular basis and they congregated at one shop operated by a plumber. They would share news of work, recommend each other for jobs, etc. When the mobile phone became available, they adopted them rather quickly and found that their incomes rose on average 66%. They were able to take more jobs because they could be reached in a more timely fashion. They were able to take jobs at further distance that the previously couldn't risk due to travel costs and no guarantee of work. They were able to build their networks of contacts, which in turn led to more work. Overall, they adopted a technology that was beneficial to them.

At the root of is all, these are businessmen. They have invested in a technology and are using it to a profitable return. It's pure business. What I find in my own and my colleagues' work, however, is that in our zeal to represent the people – the eternal subaltern if you will – we strive to show their daily lives, their context, their construction of reality. But if we show their photos, if we show their places of work and their homes, if we present our findings about the *souk* while sitting in a Silicon Valley high tech office complexes bathed in airborne digitalized waves, if we do these things while also using the erstwhile useful language of development the ever present and very powerful cognitive heuristics and biases arise , reinforcing and reifying the concepts of *poor* and *development* which in turn defeats the possibility of approaching these people as markets in a spirit of exchange.

CONCLUSION: ICT4X

Therefore, for *us* to be heard, for *us* to share the meaning of our work such those decision makers have the capacity to hear what they need to hear is not simply a matter of representing the people and their meanings for we do that well enough. Rather, it's a matter of shifting the context of those representations onto a structure, onto scaffolding that challenges and ultimately defeats the prevailing cognitive heuristics and biases so prevalent in our *milieu*. Ironically and perhaps unfortunately, the otherwise benign and noble rhetoric of

development and *poverty* may do more to *inhibit* being heard and *hinder* our ultimate justified effectiveness than we might otherwise hope to expect.

Rather than poverty and development (ICT4D), we might consider investment and exchange (ICT4X), shifting the conversation entirely to a business footing while maintaining the meanings we need to convey. We should talk about markets, services and products. We should talk about risks and rewards. For example, I've reframe some of the work we've done as follows in conversations at Intel Corporation:

"Jose Miguel's Dad made a *risky investment decision,* in selling his land and sending his son to university." Possible Action: Is there a service to offer to reduce that risk to enable more people to make such a decision?

"Gaspar has a brilliant mind for building viable, locally relevant telecenter *businesses that grow local economic productivity.*" Should he be paid as a "market development consultant" to expand his vision of economic development through technology? Might the telecentres be considered as local software vendors?

"The plumber and his cohort are using technologies to *increase the metabolism of their businesses.*" Are there other such opportunities elsewhere?

By shifting the foundation from *development* to *exchange,* we shift the assumptions and rationale with which people hear the stories about people, places and their practices. It creates a space for new ways of listening, hearing and thinking. It makes possible conversations about products, services and opportunities that may previously have been occluded. This reframing onto familiar – and admittedly potentially profitable -- territory mitigates the effect of the availability heuristic and outgroup homogeneity bias (and perhaps others of this ilk we've not discussed in this paper).

In our practice, it's tempting to borrow the language and frames of our various social science disciplines to engage and "shift" the conversation in the corporate setting. However, in the case of development, the language hinders, not helps taking positive action toward engaging more deeply in these markets with products and services that can sustain and grow local economic productivity.

Moreover, this reframing is expansive and inclusive. It's expansive, because it introduces a new way – or for some at least a different way -- to think about ICTs, their design, their use, etc. By imagining the products as parts of extant systems of economic exchange, the opportunities for business and design are expanded given a much greater sense of possibility and potential for sustainable business. This framing is inclusive because it suggests strongly a continuing, bi-directional exchange - rather than a one way handout – which is exactly the way business operates today, and exactly what Simmel would argue forms the basis of all societies.

        Making this shift is an ethnographic was to "reinvent the bazaar" of ideas, to borrow MacMillan's phrase. It's about actively figuring out new ways to do business, new business models that may be relevant and the products and services that might be viable that do not require constructs that create division or that isolate large populations as poor or developing. Exchange is a part of everyone's lived experience and forms the basis of our membership in societies. It's these messages we need to convey, to teach, to impart in our businesses, for these are the meanings that matter to us all.

REFERENCES

Henisz, W.J., Zelner, B.A., Guillén, M.F.
2005   "The Worldwide Diffusion of Market-Oriented Infrastructure Reform, 1977–
            1999." *American Sociological Review*, 70. 871–897.

Howard, P. N.
2007   "Testing the leap-frog hypothesis: The impact of existing infrastructure and
            telecommunications policy on the global digital divide." *Information,
            Communication & Society* Vol. 10, No. 2, April 2007, pp. 133–157.

Ilahiane, Hsain
2003   *Personal Communication.*

Kahneman, D., Slovic, P., Tversky, A.
1982   *Judgment under uncertainty: Heuristics and biases.* New York: Cambridge University
            Press

Prahalad, C. K. Hammond, A.
2002   "Serving the World's Poor Profitably." *Harvard Business Review.* November-
            December. 48-57.

Prahalad, C. K., Hart, S. L.
2002   "The Fortune at the Bottom of the Pyramid." *Strategy+Business*, 26: 54-67.

Quattrone, G. A & Jones, E.E.
1980   " The perception of variability within in-groups and out-groups: Implications
            for the law of small numbers." *Journal of Personality and Social Psychology*, 38, 141-
            152.

Simmel, G.
1907   "Exchange". In: *Georg Simmel On Individuality and Social Forms.* Levine, D (Ed)
            1971.