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From Farm to Farmville:
Circulation, Adoption, and Use of ICT
between Urban and Rural China

By

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University of California, Berkeley

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ABSTRACT

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In the mid-2000s, China began a set of policies to 'informatize' the countryside, i.e. to bring Information and Communication Technologies (ICT) to rural residents in order to improve their economic conditions. These policies posit the countryside as a world of 'less,' compared to urban areas, and they are framed in terms of what people who are at the margins of China's modernization (migrant workers, rural residents, older people, and farmers) need in order to improve their lives, how ICT can benefit them, and how they can access more and better information despite their low educational and income levels. In contrast to this widespread view of marginalized users as passive recipients of technologies that will help them improve their material conditions, this dissertation looks at the diffusion and appropriation of ICT such as mobile phones and computers among rural residents and migrant workers in their own terms: not as foils for elite views of why they would/should go online, but rather as people who discover the opportunities offered by the Internet that are of interest to them, and try to use these opportunities as best as they can. By following the paths through which ICT travel in urban and rural China and the social relations that are maintained, renewed, and reinvented along the way, I argue that people at the margins have to 'invent' themselves as users, and find a connection between themselves and ICT. Migrant workers play a key role in bringing ICT to the countryside, where family networks, shop keepers, and community life foster the circulation of information about ICT and their use. With the help of these intermediaries, even people who are typically dismissed by urban elites as non-users because of their age or educational level, and who live far away from the resource-rich areas where such devices are common, can still be connected to them through their personal ties as well as through appropriate and mediated use of new ICT. As a counter-narrative to the prevailing discourse on ICT and rural users, this dissertation argues that the combination of new technologies and personal networks are a powerful but often overlooked vector along which some aspects of urban growth are shared with the countryside, and that ICT have so far helped to strengthen the familial and personal networks commonly present in rural villages and often lamented as being broken by the dual forces of migration and urbanization.

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Last but of course most important: my years in graduate school have been supported in more ways than I can acknowledge by my family, purveyors of excellent holidays, and by my partner, Ken Kopp, whose patience, good humor, and culinary skills have kept me a happy and productive scholar (all bouts of unproductivity are my own). And finally, a heartfelt thank you to all the people who have tried, through the years, to break down my long, long sentences built on tangles of subordinates, parenthesis, split infinitives—not to mention the dashes. Your efforts, I'm afraid, have mostly been in vain, but appreciated nonetheless.

1 | Introduction

1. Computers to the Countryside

The sign should have been very visible: it was screwed onto the wall of a house facing the main road of the village, where people assembled to chat in the late hours of summer afternoons. It was a big sign, with a red background, and bold yellow characters that said "Computers to the countryside 13% subsidy". The village had only three roads, and the sign was located on the one that led in and out of it, a place of high traffic. But I never found any villager who had noticed it, knew what it was about, or had done anything to take advantage of the discount. When I pointed out the sign, locals dismissed computers as something for young and urban people, not for themselves; they were just "simple farmers."

The sign was an advertisement for the country-wide campaign "Appliances to Rural Households" (*jiādiàn xià xiāng* 家电下乡) started by the central government in 2007 in pilot areas and extended to the whole country in 2009, with the goal of increasing the sales of selected household goods in the countryside by offering deep discounts to rural residents (Chi-

FIGURE 1: **"Appliances to Rural Households" advertisement.**

nese Ministry of Commerce, n.d.). The campaign included mobile phones and computers, and the discounts were significant, considering that they could be applied to a number of

Chinese brands that were already quite affordable, even for modest rural incomes. And yet the campaign had not been successful as far as electronics were concerned (Ye, 2012). Rural residents were buying refrigerators, color televisions, and air conditioners, but many did not seem aware that computers and mobile phones were even included. Many dismissed the idea of buying a computer because of a government initiative, and for urbanites, this was yet another proof of the backwardness of the countryside, and of the incapacity of its residents to lift themselves out of their underdeveloped conditions and so to do their part to reduce the gap between urban and rural standards of living (CNNIC, 2012). The lone tele-center I encountered in my year of fieldwork was always locked-up. Farmers insisted on negotiating the sale of their crops with itinerant buyers on the spot, despite the huge effort and investment made by various institutions to give them more and better access to information online (Xia, 2010). And most people still found local and urban jobs in the old-fashioned way: through family networks, word of mouth, or via flyers posted on the electricity poles that dot the villages.

However, as I discovered in the course of several bouts of fieldwork spent following Information and Communication Technologies (ICT) from urban to rural areas, the Chinese countryside is full of electronic devices, from radios and televisions, to mobile phones, DVD and MP3 players, and videogames. In some villages, mobile phones were pervasive to the point of market saturation, even among older and poorer people. Internet access and computer ownership were growing fast, although still limited in their reach. Mobile phone shops were one of the most frequent sights in small villages that barely had a food store. Children were being taught the rudiments of computer use at school, sometimes as early as in elementary school, and they would then practiced their newly acquired skills assiduously in the ubiquitous internet cafes. Clearly, ICT were finding their way to the countryside, though rarely through the channels envisioned by the initiatives and plans set up by the central bureaucracy.

How had all these objects arrived to the villages? How did the same people who ignored the "computers to the countryside" campaign, dismissing it as something alien to their environment and lives turn out to be such keen users of ICT? And how could rural residents, who often had trouble reading and even more problems writing, be reading e-books on their phones, watching TV with torrent software, and using instant messages to chat with strangers?

The answer to these questions turned out to be in urban areas, among the millions of rural-to-urban migrant workers who lived and worked in cities for more or less extended periods of time, but who also maintained strong ties with their home villages, visiting them often. Parallel to the state push to bring ICT to the countryside in order to accelerate its economic development, there were innumerable private networks of sons and daughters buying a mobile phone in Beijing for their parents in rural villages in order to keep in touch; of migrant parents buying computers to make sure their children left back in the countryside would not fall behind compared to urban children; of returned migrants setting up shops to sell to their co-villagers the electronics they had learned to use in the city. These are messy, intermittent, sometimes ambivalent, but usually resilient "networks of intimacy," as historian of technology Francesca Bray defines them: they are ties among family members but also within a wider social circle that may include people of different social standing (Bray, 2008), that stand in stark contrast to the top-down, regulated presence of the state. Bray goes on to describe

these ties as relationships that "can be mobilised in pursuit of livelihood, and to press for entitlements in the name of solidarity or patronage. Such practices of intimacy are fundamental techniques for "private" individuals or families to create bonds with local or national representatives of the state, as well as knitting them into local networks of power and resources" (ibid:155). In other words, these are the ties that provide a vital connection between the rural and the urban, and allow the individual to find resources and to create some security in the sort of complex and quickly changing environment that is contemporary China.

And yet, this bottom-up movement of people and ICT has been mostly ignored by both scholars and policy makers. Program design and implementation, impact assessment, and public discussion on ICT among 'marginalized populations' (migrant workers, rural residents, older people—in other words, all those left at the margins of China's exuberant development over the past 30 years) are mostly focused on the top-down approach of the state and urban elites, and on their definition of why ICT is useful for the economic development of the countryside, how ICT should be used by rural populations, how it should reach them, and what role should the state and the market play in the process. This unilateral perspective reflects two historical legacies that deeply affect contemporary Chinese society. The first concerns the role of technology in the development of the country, a function of the specific Chinese encounter with Western technology. The second is the result of the deep economic and social divide between the country and the city that is itself mostly a consequence of the institution, in the1950s, of the *hukou* (户口), a household registration system that divided the whole population into either urban or rural.

Contrary to most of the existing literature on ICT in rural China, I focus on the perspective of marginalized populations, by exploring the micro-level circulation and adoption of ICT and the social relations that become embedded into them. Following the paths through which ICT travel in urban and rural China and the social relations that are maintained, renewed, and reinvented along the way suggests that family networks are the most efficient and effective way to bring ICT to marginalized populations, and are more effective than the state's investment in bringing about the informatization of the countryside. In contrast with both the macro-level policies (and discourse) of the state and the prevailing literature on the use of ICT in rural China that depicts rural users as passive recipients of technologies that will help them improve their material conditions, I locate users as active agents who will appropriate ICT in unconventional and unexpected ways. In order to discover what happened beyond the stereotypical portrayal of rural residents as unaware of the possibilities offered by ICT (CNNIC, 2011), I followed the circulation of ICT from urban to rural areas through migrant worker networks in order to reconstruct a "cultural biography" of ICT (Kopytoff, 1986), where ICT start their 'lives' as commodities, gradually become 'domesticated' by their owners, and ultimately reconfigure social relations throughout the process. As Kopytoff notes, "Biographies of things can make salient what might otherwise remain obscure… what is significant about the adoption of alien objects—as of alien ideas—is not the fact that they are adopted, but the way they are culturally redefined and put to use." (ibid:67). The bottom-up view of ICT shows them as a locus of relationships, rather than simply commodities which are deployed in the countryside to achieve 'development.'

The goal of my research is threefold: one, to re-orient the study of ICT in the countryside and among marginalized populations from the perspective of the state to that of the users themselves; two, to explore the materiality of ICT objects in order to understand the way users engage (or fail to engage) with them, while examining the goals users pursue; and three, at a more general level, to contribute to theories of ICT users, and in particular to the emerging scholarship on users of technology at the periphery of the production of technology. In the next sections I will outline the two historical legacies of the Chinese encounter with Western technology (and the way these have shaped how the country sees and deploys technology), and of the urban-rural divide. I will then argue how a shift from "information have-less" (Cartier, Castells, & Qiu, 2005) to "unimagined users" (Burrell, 2011) better captures marginalized populations and their use of ICT, highlighting the significance of such users within the field of user studies, and in particular within domestication theory. I conclude with the contributions that this work represents to the study of users in emerging economies, and a summary of the next chapters.

2. The Chinese State and the Informatization of the Countryside

2.1 Historical Legacy: China, Technology, and the West

Truly disruptive Western technologies were introduced to China beginning from the 16th century: at first there were Jesuit missionaries bringing clocks and modern weapons (Cipolla, 1978; Elman, 2005, 2006), followed, in the 19th century, by Western powers bringing railways and telegraphy in their quest for colonial expansion and business opportunities (Y. Zhou, 2006). The slow decline of the Qing dynasty was characterized by a strong internal division between conservatives who believed that China could remain isolated from Western influence and Western attempts at establishing colonial outposts on her territory by strengthening her own traditions and institutions, and reformers who believed that foreign knowledge and foreign technology in particular were necessary to preserve the independence of the country. In the 1880s, the reformers came up with a formula for the revival of the nation that would rely on Chinese 'essence' (*tǐ* 体) and foreign 'means' (*yòng* 用): "Chinese learning for *tǐ* (substance, essence) and Western learning for *yòng* (function, utility) (*zhōng xué wèi tǐ xīxué wèi yòng* 中学为体西学为用)" (Zheng, 2008:20).

This formulation emphasized the fact that China needed practical expertise from Westerners in order to thrive once again, but did not need Western values. However, China's defeat by Japan in 1895, a humiliating foreign intervention during the Boxer Rebellion in 1900, the collapse of the Qing dynasty in 1911, and the weak position the country found herself in during the First World War culminated in the rise of a more radical reform group, the 'May 4th Movement,' made up of those who believed that the combination of democracy and technology would be the solution to China's problems.[1] China's traditional values were considered unscientific, and symbolized the reasons for the country's defeat by Western powers, whereas science and democracy represented modernity, rationality, and the hope of restoring China to her previous glory. Belief in science and technology as the keys to building a strong country became even stronger as ideas of democracy slowly faded away during the civil war period, and began to be embodied in government policies with the establishment of the communist People's Republic of China in 1949.

During the Mao era (1949-1976), the primary focus of the Chinese Communist Party (CCP) and its government was to develop domestic heavy industry and military technologies (Zhao, 2010:268). In the 1980s, as Deng Xiaoping's reforms opened the door to foreign capital, investment, and, once again, technology, radically changing the economy of the country, Party intellectuals explicitly described the result as 'socialism with Chinese characteristics,' once again evoking a native genius combined with an externally derived means as the way to achieve progress. Unlike previous attempts at achieving a fast and sustained progress, this time China was successful, beginning a period of unprecedented economic growth. Information technologies have become particularly important in this process, as "not only perceived as the most modern indicator of scientific and technological progress but also as a symbol of the modernity of the Chinese state." (Zheng, 2008:18).

2.2 Informatization, Economic Growth, and the Development of the Countryside

More recently, the dominant public discourse has become one of 'techno-nationalism' (Qiu, 2010), i.e. an attempt at achieving international preeminence in the technological field, accompanied by an emphasis on the necessity of indigenous technological innovation and the creation of standards that can then been exported to the rest of the world, which is for the time being more of an aspiration than a reality.[2] But the goal is clear: to stop being simply a manufacturer of Western technology, and become a world-class innovator, showing that the "century of humiliation" (mid-1800s to mid-1900s) at the hands of Western powers has truly ended.[3] Consequently, the "IT-based, export-oriented and FDI-driven growth" (Zhao, 2010:269) that started in the 80s morphed into a more general strategy of 'informatization' (*xìnxī huà* 信息化) around the time when the Tenth Five-Year plan (2001-05) was issued by the State Council, making informatization of the national economy a strategic priority. This was followed by a "National Informatization Development Strategic Plan 2006-2020" issued in 2006 by the General Office of the Central Committee of the Communist Party of China (CPC) and the General Office of the State Council, which emphasized that ICT would be the key for development of the entire country, stressing the fact that information and access to information are as important for the future of the country as natural resources, because they provide the infrastructure needed to support the growth of other industrial sectors in the information age (Dai, 2003; Yu & Li-Hua, 2010).

In 2006, following dramatic growth in the gap between urban and rural income and a resulting intensification of rural protests, the state launched an ambitious plan to improve the overall living conditions of farmers, called "Building a New Socialist Countryside" (*jiànshè shìhuì zhǔyì xīn nóngcūn* 建设是会主义新农村).

Part of the government five-year economic plan, it focused on providing more support for agriculture and better development of public services in the countryside, with an emphasis on the role that technology could play (Lei Yang, 2006). In particular, ICT are singled out as tools that can give farmers more and better access to information, especially about markets and agricultural technology. The ultimate goal is to bridge the income and opportunities gap between urban and rural China, and to create a more modern agricultural sector. Specifically, informatization is seen as a means to better integrate the internal rural economy by facilitating information exchanges between more and less developed Chinese regions; to increase the

quantity and quality of information that farmers and rural residents have access to in order to allow them to increase their incomes and diversify their activities; and to integrate and share information related to rural areas across different provinces and different (Qiang, 2009).

The general informatization plans provide the framework for more specific policies and initiatives.[4] Some are carried out directly by the government, like the high-profile plan for "Poverty-Reduction through Provision of Communication Networks and Computers to Rural Areas' (*nóngcūn xìnxī huà fúpín* 农村信息化扶贫), the "Framework for National Agriculture and Rural Informatization 2007-2015" (Duan, Warren, Lang, & Lu, 2009), as well as the earlier "Golden Agriculture Project" (the official English translation of the Chinese Agricultural Informatization website, *Zhōngguó nóngyè xìnxī wǎng* 中国农业信息网) launched in 1995 by the Ministry of Agriculture and then re-invented as a website for agricultural information and rural market-related services (Golden Agriculture Project website; Zhang, 2008). A number of projects were started by non-governmental organizations and international agencies (Soriano, 2007; Ulrich, 2004; Zhang, 2008), and others in collaboration with the private sector, such as the high-profile Yellow Sheep River project, where a Taiwanese entrepreneur established a tele-center in the Yellow Sheep River village located in the mountains of Gansu, one of the poorest provinces of China (Fallows, 2008), or the tele-center near one of the Shandong villages where I carried out fieldwork, supported by donations of money and equipment from the provincial TV station.

The goals, scope, reach, and funding of the different initiatives related to the informatization of the countryside are very diverse, and there is no general country-wide assessment available yet. A handful of localized assessments of specific projects (Nie, Zhang, Bi, Liu, & Tian, 2011; Qiang, 2009; Soriano, 2007; Ulrich, 2004; Zhao, 2008a), and a general evaluation of the policies (and politics) behind the rural informatization programs (C. Liu, 2012; Ting & Yi, 2012; Xia, 2010) suggest that projects that include tele-centers are encountering many of the problems that exist in other countries following similar policies. Tele-centers depend on public funding and do not become self-sufficient from a financial perspective. The way they are used by the targeted population is found ineffective, as far as the goals set by the government are concerned, so computers that are meant to be used for finding agricultural information and market prices are instead used for entertainment. Despite the initial financial support of the central and sometimes local governments, there has been an emphasis on quantity rather than quality, and on form rather than training. And finally, 'informatization' has not been defined clearly enough, and therefore it is difficult to assess whether it has been achieved and what its benefits are. This stands in particular contrast to the preceding government-led projects to bring ICT to the entire country, which focused on extending telephone landlines, radio, and television to rural areas through the "Village Access Project" (Xia, 2010).[5] This project, with clear, achievable, and mostly achieved goals, together with a parallel and successful drive to supply electricity to remote areas, has provided the solid basic infrastructure that exists in most of the countryside. Clearly, as Xia points out, the problem is in the lack of a specific definition of what 'informatization' entails and how to measure its success. Supplying electricity to a village consists of a series of precise and finite steps, and the end result is easily measurable: the village has electricity. The material part of the informatization plan, e.g. extending access to ICT by providing mobile phone coverage and fast internet connection to rural areas, is in fact proceeding and has already obtained remarkable results. But what exact-

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ly is the provision of "comprehensive information services" (Ibid:1), and how its effects should be evaluated as far as the targeted population of rural residents is concerned, is left vague.

But the important aspect to reiterate here is that both the goal of rural informatization and the means to achieve it are set by the central, urban elite. Rural residents are passive (or even reluctant) recipients of these development plans, as the following statement made in 1998 by Liu Ji, former vice-president of the Chinese Academy of Social Sciences, and adviser to former President Jiang Zemin, eloquently shows:

> "The goal of political system reform is clearly to build socialist, democratic politics… But how do we reach this goal? We have to start from China's reality. For example, we have about 200 million illiterates… Do you give such a person the right to vote? Of course you should. But is his vote worth as much as the vote of a PhD who has returned from America? Or of a university professor? Or of a government official? They are not equal. Someone who is illiterate does not have the ability to choose… If we gave everybody a vote, when their votes are of different value, then a lot of good resolutions put forward by intellectuals would never pass, because intellectuals are a minority… To build an information superhighway costs a lot of money. Intellectuals would immediately pass such a resolution unanimously. But the attitude of the 200 million illiterates would be: "What is an information superhighway? What has it got to do with me? My first demand is to hurry up and give me food to eat. And then let me study at the primary-school level." As for the vote, he'd be likely to vote against the information superhighway, and want to solve poverty first." (Zhao, 2007:99)

Seen in the context of the economic policy of the time, which emphasized economic growth above everything else, this sentence points out how ICT was not seen as a supplement to basic investments in education and infrastructure to lift the countryside out of poverty, but rather as a separate tool that, under the guidance of intellectuals, would be good for the entire country going forward, helping the countryside to catch up with the more developed urban areas. The policies and investments made by the state in the years following this declaration were indeed aligned with the goal of building the infrastructure for the 'information superhighway,' while policies to expand truly free primary and secondary education and to support rural residents came much later.

The idea of 'development through informatization,' and the policies to enact it and to bridge the technological gap between China and the West on the one hand, and between urban and rural areas on the other, are clear historical legacies of the *tǐ - yòng* formulation of the Qing dynasty. It is true that the idea of a future where it is necessary to be 'good with technology'—which then translates, for example, into mass campaigns for the distribution of computers to schools and among families—is neither new, nor circumscribed to China.[6] What makes China a rather different case is her historical trajectory from a culture where important technological innovations took place and were then diffused throughout the world, to one characterized by scientific and technological stagnation.[7] Scholars have long debated the question of why China did not go through a scientific revolution akin to the Western one, and although historians such as Joseph Needham and his definitive work Science and Civilisation in China demonstrated that it is more appropriate to talk about a different trajectory of technological development, rather than a lack of scientific revolution, the fact remains that many Chinese feel that their country has been left behind in a field that it once dominated. The current efforts by the state and the private sector to re-establish China's position of importance in the technological field are strongly influenced by this perception.

2.3 The Urban-Rural Divide: *Hukou*

"Are you a city person or a rural person?" This was, invariably, the first question I was asked when I arrived in a new village, or was introduced to a rural resident. So deep is the divide in China between rural and urban areas that even my foreignness took second place to the fundamental distinction of rural and urban. The distinction is pervasive, in daily life for both urban and rural residents, as well as in the press and in academia.

The establishment of the hukou in 1958 is the key element exacerbating the difference between urban and rural status. The hukou is a household registration system, and its purpose was (and, mutata mutandis, still is) to halt the unremitting flow of rural residents to the cities that had been going on since the end of the civil war in 1949 (Solinger, 1999). Under this system, people have to register in the place where they are born, which is classified as either urban or rural, and can subsequently get a job or access social services such as education and healthcare only where they are so registered. Over the years, this has ensured that the state has maintained more or less strict control over who could move where (Davin, 1999:5). With the exception of the Cultural Revolution years (1966-1976), when Mao's "sent-down" policy forced 17 million young urban residents (Zhou & Hou, 1999) to move to the countryside in order "to learn from the revolutionary spirit of the peasants" (Jacka, 2006:39), people remained in their place of origin.

Mass migration from rural to urban areas began in the mid-1980s, as the reforms started in 1978 by Deng Xiaoping's "Reform and Opening" policy created a strong demand for labor in the coastal areas of China. The establishment of a 'socialist market economy' put the population in motion, as the booming industrial sector in coastal areas required extra labor. But the rules on residency have remained in place, although slightly altered: people with rural hukou are allowed to enter cities, although they cannot (even today) move their official place of residence. The lack of access to housing, education, and social safety net has been very effective in guaranteeing that most migrants return permanently to their homes, regardless of how many years they have been away (Qiu, 2009).[8]

3. Unimagined Users: Locating the User in Rural China

3.1 "Information Have-Less" and "Unimagined Users"

The combination of the double historical legacy described above—on the one hand, technology seen as the key to China's efforts to modernize, and on the other, a separation between urban and rural citizens that has become deeply ingrained in society—has resulted in a discourse that depicts the 'rural' as the main obstacle in the country's developmental trajectory, and the area most in need of help. The view from the center is that the countryside is a backward place that needs to be developed as soon and as fast as possible. Life in rural areas is a sum of negatives: much lower incomes; bad schooling; scarce or non-existent welfare; inefficient agriculture; few jobs (especially good, secure ones); much corruption; inevitable migration. A world of 'less,' compared to urban areas, including less ICT. Most of the existing scholarship on the use of ICT is framed in terms of what rural people need to improve their lives, how mobile phones can benefit them, how rural residents can access more and better information despite their low education and income. In particular, studies on the micro-level

impact of ICT typically conclude that farmers are passive recipients of government initiatives, that their low literacy constitutes a high barrier to ICT adoption, and that they usually reject ICT, or do not express a voice in how they should/could use them (Ye, 2012; Zhao, Hao, & Banerjee, 2006; Zhao, 2008b). This framing of rural residents as powerless and in need of help is also common among critics of the government-led policies on informatization, who focus on the problems with the economic sustainability of the policies and their lack of clear focus and outcomes, rather than on the principles behind the policies (C. Liu, 2012; Ting & Yi, 2012; Xia, 2010).

A second strand of scholarship, which dominates Chinese-language research on rural informatization, focuses on the technical implementation of the informatization programs, with both assessments of existing projects and proposals/pilots for new ones. (Cui & Liu, 2012; Ge, Zang, Gao, & Shi, 2010; Li, Liu, & Chen, 2011; Sun, Wang, & Lu, 2011; Lu Yang & Xiao, 2008; Yuan, Liu, Li, Liu, & Chen, 2011; Jianshe Zhao, Li, Yang, Meng, & Huang, 2011). This kind of scholarship usually considers the user only as a variable in a technical system. Murphy and Wallis are among the few researchers who stress the importance of local circumstances and individual attitudes toward ICT, rather than looking at rural use of ICT as a comparison between urban and rural uses (Murphy, 2010; Wallis, 2012a). Murphy, in particular, highlights the role that individuals play in bringing ICT to the countryside, for example by operating internet cafes, while at the same time acknowledging that both the state and telecommunication companies play a role in building the infrastructure needed to provide reliable and affordable functioning of ICT to the countryside.

Scholarship on another segment of population that is as marginalized as rural residents—migrant workers—provides a less negative depiction of their circumstances and options. Migrant workers are often described as "information have-less," a term originally coined by Cartier, Castells, and Qiu to describe Chinese rural-to-urban migrant workers, urban laid-off workers, retired people and youth who use low-end ICT such as cheap mobile phones and internet cafes (Cartier et al., 2005; Qiu, 2007). This expression provides a memorable metaphor that draws attention to understudied users who do not fully participate in the information society because of their low income and sometimes low education, but who have agency and adapt the tools they can afford to their needs:

"Is there an alternative model for the digital economy that does not increase polarization in the informational city? Can ICTs be shaped in particular ways to become "information technologies with a human face" (Castells, 1999)? By examining recent developments of relatively low-end digital media in China and their users, this analysis maintains that the possibility exists under certain social, institutional, and transformational contexts, and not by way of top-down government technology regimes or poverty-alleviation projects, but instead at the grassroots level through the materialization of a new class of information users: the "information have-less." Like the information haves and have-nots, the information have-less is an informational—and therefore social, economic, and political—category in the evolving network society, which sensitizes us to a new set of phenomena, problems, and policy options." (Ibid:10)

Compared to rural residents, migrant workers are usually granted more agency, in general and in their use of ICT. This area of scholarship is richer in ethnographic accounts, especially of the adoption of mobile phones, and the role they play in helping young migrants create their own identity in the city, and expand their social networks (Chang, 2008; Chu & Yang, 2006; Ma, 2005; Wallis, 2010, 2011, 2012a, 2012b; Yang, 2008). Other studies have emphasized the consumerist aspect of purchasing ICT, and pointed out how migrant workers represent an attractive market for ICT companies (Law & Peng, 2006).

However, both the term "information have-less" and a perspective that sees rural and migrant users as people in need of help to use ICT for economic development are problematic ways of framing the engagement with ICT by marginalized populations. While catchy, the term "information have-less" conflates the ICT object with the information that can be accessed through it, and hides both the differences that exist among marginalized populations in their ability to use ICT, not only to access it, and the specificity of use by those who might all be at the margins of urban, developed, educated China, but who live in diverse circumstances and have diverse goals.[9] Ultimately, the term blackboxes the dynamics of information-seeking and ICT use among elite and marginalized populations, because it considers the latter to have the same, but simply downgraded, information and ICT needs as urban people. In both Cartier et al and Murphy's depiction, migrant workers use ICT to keep in touch with each other and find better job opportunities (Qiu, 2009) and rural residents use ICT to keep in touch with migrants to prepare for their future migration (Murphy, 2002, 2010)—but the locus of knowledge is always elsewhere, the term still implies comparison with the "information have-more" and their use of ICT, and their information-seeking activities. As Murphy describes it, the use of the internet in the countryside is framed (by rural residents themselves) in terms of how the internet is used and seen in urban areas:

> *"When I asked villagers living near townships if they ever went to the local internet cafe, common responses included "We don't understand it," "We have no culture," and "Why would a farmer go online?"* (Ibid:179)

This quote underlines how an urban-centered understanding of marginalized users as people who are uneducated and reluctant to use new technologies is actually pervasive among marginalized populations themselves, as I will discuss in chapter six.

The present work aims at re-orienting this distortion of perspective by looking at the use of ICT by marginalized populations in their own terms: not as foils for elite ideas of why a farmer would/should go online, but rather as people who discover the opportunities offered by the internet that are of interest to them, and try to exploit these opportunities as best as they can. I am hoping to expose what Bray calls "alternative constructions of the world" that do not imply a comparative hierarchy, but rather expand the realm of possible and legitimate uses (Bray, 1997:11). These alternative constructions of the world and in particular of technology, have been a particular concern of (Western) feminist scholars of technology, who have pointed out that women's perspective, usage, and contributions to technology are remarkably absent in the history of technology, as well as in contemporary studies of technology and ICT adoption and use (MacKenzie & Wajcman, 1985; Wajcman, 2009). The same can be said in the Chinese case of migrant workers and rural residents, especially older ones, another group of technology users that are far from the centers of technology development and distribution. To shift the focus to these users, I propose to employ the term "unimagined users" as an

alternative to "information have-less." The former term was originally introduced by Burrell in her work on the function that rumors about the internet played in helping users in Accra, Ghana produce an account of the internet that fit their own social context (Burrell, 2011).

Burrell aims at opening out the study of users to include the perspective of "unimagined users," that is "users who exist outside of what is considered [technology's] market and who are geographically and culturally distant from the designers and manufacturers of its components" (Ibid:141). She points out that the traditional supply chains through which the cycle of production-exchange-consumption of technology moves, and which constitute a feedback loop through which producers of technology understand users, break down in the "far-flung corners of the world" that are nevertheless reached by ICT devices themselves. An alternative supply chain, made for example of diasporic family networks that bring equipment for internet cafes to remote areas, takes form and supports users who are not part of the imaginary of technology producers. Burrell stresses the absence of "bidirectional communication flows between designers and users" (Ibid:142), as well as the role that users can have in propagating their own interpretation to other people of why and how a certain technology is (or is not) useful. Understanding these human-based 'user manuals' of technology helps create a richer conceptualization of user agency, especially in emerging/developing regions that are cut off from the formal production cycle of technology. For Burrell, "unimagined users" are an important part of the localized construction of a technology such as the internet, together with what Wyatt calls "non-users" (Wyatt, 2003). The situated technology as a whole—in her case, the internet in Accra, Ghana—can only be understood by looking at users, non-users, and those who became unexpected (from the perspective of the technology creators) users.

My own use of the term is slightly different from Burrell's. While she considers users as unimagined by the creators of technology, therefore as "unimagined" from a center-to-periphery perspective, I expand her definition to include users as unimagined to themselves as well. The farmer asking "why would a farmer go online?" that Murphy cites, and whom I frequently encountered in the villages where I carried out fieldwork, imagines the internet as something that requires deep knowledge of electronic machines—which he does not possess, even when he does have a computer—and an interest in otherwise unspecified 'urban activities.' Rural women, and sometimes even young female migrants living in Beijing, shyly dismissed computers as something for males, or anyway educated and "technically-minded" women. Yet many of these people did use the internet, but they did not necessarily frame what they did as using the internet. In the countryside "Going online" was widely considered an activity for either educated people "finding information" (*chá zīliào* 查资料, an expression I frequently heard from women describing what they thought their white-collar relatives did with computers) or students at school who should have also been "looking for sources" but instead squandered their time playing games and watching movies. What my informants did on computers was often described in terms of activities that resembled their daily, familiar life: I play cards, except that I do so on a screen with people I don't know; I click on the screen as my son taught me and can watch television programs when I want rather than when they are shown; I can see my grandson on the screen and talk to him, it's like a television except that there is my family instead of actors; my child's teachers contact me on the phone (in fact, via Instant Messages on internet-enabled mobile phones) for updates on what goes on

in class, etc. When asked directly, many of these people deny being internet users, or using their mobile phone differently than the landline, i.e. doing anything other than making and receiving calls. Close observation reveals that they are keen users of the internet, but are not always aware of being so.

In addition to this view from the periphery, I also consider the improvised and at times unlikely distribution chains that bring ICT to marginalized populations as fundamental in constituting these unimagined users. It is not only, as in Burrell's example, the role played by diasporic family networks in creating the infrastructure needed for people to use technology by bringing the equipment that would not otherwise arrive in a timely and affordable way to the periphery of the technologized world; it is also the role played by people all along this chain through teaching unimagined users how to use ICT, and through offering their own ideas about what the utility of ICT is, that ultimately shapes the relationship unimagined users' have with technology. Rural people, even more than migrant workers, are often outside the marketing, distribution, and advertisement channels that contribute so much to the collective imagining of ICT in more urban places. Instead of the ubiquitous advertising of ICT on billboards, TV, and the press that characterizes one of the main urban vectors of ICT awareness, in the countryside there are family networks, shop keepers, and an intense community life that foster the circulation of information about ICT and their use. I therefore define "unimagined users" as users who do not consider themselves as likely ICT users, but who at the same time engage with ICT through the direct or indirect help of their family and community.

By expanding the definition of ICT users to those who are outside urban and developed areas, my research contributes to the small body of literature that focuses on users in emerging regions and their engagement with technology in a way that goes beyond utilitarian and economic development-oriented use. The literature on ICT users in developing regions is dominated by the "ICTD" (Information and Communication Technologies for/and Development) perspective, where actual and potential users of technologies are only recognized as such if they have practical and pragmatic goals such as increasing their income, finding out information about agriculture and trade, getting healthcare and educational services that would not otherwise be available. Frequent themes under this umbrella are the use of mobile phones in agriculture and livelihoods, technology and healthcare, ICT and education, tele-centers, software for illiterate or semi-literate populations, ICT for microcredit and financial services, etc. This is a vast area of research, and its most important publications and trends have been well summarized in a number of recent papers (Aker & Mbiti, 2010; Aker, 2011; Dodson, Sterling, & Bennett, 2012; Donner & Toyama, n.d.; Donner, 2008; Gomez, Baron, & Fiore-silfvast, 2012; Patra, Pal, & Nedevschi, 2009; Qiang, Kuek, Dymond, & Esselaar, 2011). In the ICTD paradigm, software, hardware, and services are designed and evaluated from a utilitarian point of view: are they easy to use for semi-literate users? Are they sustainable? Can they work in the absence of a reliable infrastructure?

A different perspective on the use of ICT in emerging regions comes from scholars who look at these technologies as a holistic part of daily life, as an expression of local culture, history, and contemporary socio-economic conditions (Burrell, 2012; Eglash, Croissant, Di Chiro, &

Fouche, 2004; Horst & Miller, 2006; Miller, 2011; Wallis, 2012c). These works—and my own research is aligned with both the methods and goals of this scholarship—emerge from long-term ethnographic involvements in the countries studied. They differ from the typical ICTD literature because they observe users in their environments, and generally avoid pre-made categories for what is appropriate (or proper) use of ICT. The focus is firmly on users located at the periphery of the developed world, on people who are far removed from the centers of technology creation, and who face different types of constraints compared to Western users. Such users live in physical environments that are often not particularly friendly to ICT: in the case of rural China, unpaved roads and the porosity of the boundaries between internal and external environments create a thin layer of dust that covers and penetrates everything, and that impairs the functioning of electronic devices; in the case of countries like Ghana (Burrell 2012) or Jamaica (Horst & Miller), the electrical grid might be unreliable, and subject electronic devices to voltage spikes they are not designed to absorb. In addition, rural residents in most emerging countries live in areas that are peripheral to, when not completely excluded from, the commercial distribution networks of ICT.[10]

The fundamental questions that these very different strands of research on technology and its users seek to answer are: what are the social processes that underlie technology's diffusion through society, and its incorporation on people's lives? How do people's behaviors, socio-economic and cultural situations, and geographical locations influence these processes? The fast rise of mobile phones and internet has opened up a new field of technology studies looking specifically at the diffusion of these ICT, and their adaptation to different environments, different social classes, and different countries. Everett Roger's Diffusion of Innovation is a widely used analytical framework to explain diffusion of ICT (Ling & Donner, 2009; Rogers, 2003), and new theoretical frameworks are being developed to specifically explain mobile phones. For Castells et al, "relentless connectivity" constitutes the most salient feature of mobile phones, as well as the possibility of constituting "instant communities of practice" based around shared interests (Castells, Fernandez-Ardevol, Qiu, & Sey, 2007:248-249). Wajcman et al. echo Bray in considering ICT as tools that "create and reshape relationships between people, altering the basis of social interaction" (Wajcman, Bittman, & Brown, 2009:19).

But theorizing about new media is only just beginning, and most research consists of empirical case-studies, and extensions of existing Social Shaping of Technology (SST) theories. In "What's New about New Media?," Silverstone argues that:

> *"We have to begin our answer with old theory and with familiar but necessary preoccupations. We have to enquire into the matter of determination, and of the status of 'the technological' as a category. We have, for example, to enquire into the nature of power, and the degrees of freedom both to shape and to resist technology. We have to discuss communication, information and mediation as process. We have to think symbolically as well as materially. We have to confront history and historiography, theory and methodology, both in the context of adjudicating between evolution and revolution, and in framing our judgments about cause and effect. And we have to engage with specific discourses, in media theory, in the social studies of technology, in their recent efforts to comprehend the tortured interfaces between institutions, technologies, texts, and uses."* (Silverstone, 1999:10-11)

Silverstone is associated with domestication theory, a framework that is often invoked in the study of ICT in the household, and which is useful in understanding some of the dynamics that take place in rural China. This will be the subject of the next section.

4. Domestication Theory

The adoption of ICT among marginalized populations that I observed was a long, drawn-out process with as many set-backs as successes, with constant, sometimes irreversible, interruptions and dead-ends, with improvised solutions to local problems, and with a strong reliance on family members and other 'intermediaries.' Domestication theory, which situates itself in the Social Shaping of Technology framework, is a particularly apt lens through which to analyze and understand such processes because it provides a nuanced and, compared to other approaches, less individual-based interpretation of the process of adoption and use of ICT (Berker, Hartmann, Punie, & Ward, 2006:5). Domestication emphasizes the fact that technology adoption is something that happens over time within a network of people, and that is always reversible. It focuses not only on the adoption and use of ICT, but also on how the human and spatial sphere around it is touched and modified by technology. If the mobile phone or the computer are a stone thrown in the water, domestication focuses on all the ripples that the stone causes in the water: from how physical spaces are reconfigured, to how people who are not directly adopting the new technology are affected, to how space and time themselves are reconfigured.

Influenced by media studies and its interest in media audiences on the one hand, and by the emerging literature on consumption on the other, domestication theory appeared in the early 1990s in Great Britain (Haddon, 2007). It provides a set concepts for describing and analyzing the different phases that consumers go through when acquiring ICT and making it part of their routines: commodification / appropriation, objectification and incorporation, and, finally, conversion.

The process of actual ICT incorporation into people's lives begins from the time they first become aware of the ICT object and start imagining it as part of their own lives. Commodification refers to a 'pre-domestication period' during which the object is still just a commodity for sale on the market, but the potential user is already constructing her own image of how it can enter her life.

> *"Commodification necessarily depends on a dimension of imaginative work that potential or actual consumers undertake as they participate, willy-nilly, in the consumption process (…) Commodities are constructed as objects of desire within an advertising and market system that depends for its effectiveness on the elaboration of a rhetoric of metaphor and myth: a seduction of and through the image."* (Silverstone & Haddon, 1996:63)

The goal, in this early phase of the process, is to understand what kind of symbolic meaning ICT have for users/consumers, and what the influences are that lead them to make the decision to purchase ICT. However, as I will discuss below, domestication theory does not really consider how objects can enter a household through more oblique routes than the market place, for example through gifting. This is not simply a different way of acquiring a mobile phone: it is the way unimagined users enter the realm of consumption and use. Older people, or women without disposable income do not see themselves as potential users of ICT, and are certainly not considered likely users by designers and marketers of technology. And yet,

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thanks to a thoughtful gift (or a thoughtless one, as we'll see in chapter three), such users are suddenly immersed in the consumption process, and find ways of adapting it to their own imaginary. This is the phase of appropriation, which happens once the object is sold and leaves the world of commodities to enter the ownership of an individual or a household. This is a crucial phase where "commodities become objects (…) and cross the threshold between the formal and the moral economies" (Silverstone & Hirsch, 1992:19), and where mass-produced objects become intertwined with their owners' worldviews.

When the object becomes part of the household, its materiality becomes paramount to understanding where it will be physically located, and what kind of interactions and negotiations will take place around it—these phases are called objectification and incorporation (Carrier, Silverstone, & Hirsch, 1993). Objectification refers to the physical location of the object in the house, and at how it 'joins' other objects to display how the household organizes and displays its material environment.

> *"Objectification reveals itself in display and in turn reveals the classificatory principles that inform a household's sense of its self and its place in the world. These classificatory principles will draw on perceptions of, and claims for, status and will express and in turn define differences of gender and age as these categories are constructed within each household culture."* (Ibid:20)

When objects are incorporated into users' lives, i.e. "fitted into a pattern of domestic use in domestic time" (Silverstone & Haddon, 1996:64) that is often different from what designers had imagined, issues of gender and age, tensions around ownership and use, and the creation of spatial and temporal boundaries around use are brought to the fore.

Finally, the conversion phase is about the 'media' role played by ICT, or the fact that they bring content from the external world to the household and viceversa, content that is interpreted, engaged with, and responded to by users. A key concept in this phase is that of double articulation, which refers to the dual role that ICT play as objects and media platforms, and it is what allows domestication to merge the sociology of media perspective on the symbolic role played by communication technologies, with the Science, Technology, and Society (STS) perspective on the materiality of technologies (Wajcman & Jones, 2012:679).

There are two areas where domestication theory can offer profound insight into Chinese rural users of ICT. The first is its focus on the construction of the user. Silverstone points out that with many new technologies, an important problem faced by developers is that they need to create a user. When the CD was invented, for example, there was no request for it, nor a clear understanding of what it was for, what need or niche it could fill (Silverstone & Haddon, 1996). The makers of technology 'invent' a user, and through market feedback, the characteristics and needs of such a user get refined and, if successful, a new market is created (see also Woolgar, 1991). Conversely, I argue that in the Chinese case (unimagined) users have to 'invent' themselves, and find a connection between ICT and themselves, especially when they live in rural areas. Migrant workers are exposed to the technology experience in urban areas, directly through co-workers, friends, clients, and indirectly through advertising, shops, and the sheer amount of technology available everywhere. Rural residents, especially older ones, lack many of these stimuli, which creates, as we will see in chapter four, the typical reaction "computers are not for me," which sentiment indicates than the link between these ICT users

and the world where technology is commonplace is not organic to their living conditions, and has to be created from the ground up, usually with the help of migrant relatives.

The second area of insight offered by domestication theory is the focus on families rather than individuals as a unit of analysis for the use of ICT. Domestication theory draws attention to the fact that an individual's use of technology is never purely individual, never a solitary activity: it influences all the people around the user, starting with family members, and including non-users. In the Chinese context, this attention to family and family dynamics proves particularly useful, especially in the countryside where the members of extended families often still all live in the same house. In these cases, the purchase and use of ICT by one member of the family is often negotiated by the entire household, and has consequences for everyone.

Paradoxically, the focus on the household is one of the most criticized aspects of domestication theory, especially when dealing with mobile phones and the internet. How can we draw a boundary around a household when the mobile phone and the internet expand the reach of the household itself? Does it make sense to look at the family as the locus of understanding technology, when mobile phones and the internet blur the boundaries between home and work, between the local and the global? David Morley, who has long been involved in the development of domestication theory, points out that:

> *"under the impact of new technologies and global cultural flows, the home nowadays is not so much a local, particular or `self-enclosed' space, but rather, as Zygmunt Bauman (2001) puts it, more and more a `phantasmagoric' place, as electronic means of communication allow the radical intrusion of what he calls the `realm of the far' (traditionally, the realm of the strange and potentially troubling) into the `realm of the near' (the traditional `safe space' of ontological security). Electronic media can thus also be argued to produce a psychic effect, which we might describe as that of the 'domestication of elsewhere' - a process whereby Hollywood brings images of the streets of the `global cities' of the world to people everywhere, without their having ever visited them."* (Morley, 2006:23)

Whereas these are very good points to raise in an urban context, rural China is not quite yet a 'phantasmagoric' place, but rather, despite all the changes of the past decades, a rather self-enclosed place. The 'realm of the far' does intrude, but usually through the intermediation of family members who have traveled. Bell et al note that

> *"Unlike American culture, most Asian cultures do not value the individual as the smallest unit of social organization, rather there are a range of other kinds of social units ranging from the extended family to the clan, surname, native place association, women's lending circle, lineage, or patriline"* (Bell, Blythe, & Sengers, 2005:165).

In other words, the household as a unit of analysis is not only alive and well in China, but also indispensable to understanding dynamics of ICT adoption and use that would otherwise appear rather mysterious.

However, there are parts of domestication theory that do not explain the variety of behaviors seen in environments that are very different from the Western and economically affluent one where the theory originated. In the next section, I will describe the extension of domestication theory to include the unimagined users that my work suggests.

4.1 Extending Domestication to Unimagined Users

In its early days, the ambition of anthropology was to find behaviors that were general and common to all human beings, but it soon concentrated on local particularities, seeking rather "to represent a particular way of life as fully as possible" (Marcus & Fischer, 1986:22). The study of the usage of ICT is following the same path, from the early days of research looking at how 'people' used a certain ICT, to the current wave of site- or culture-bound studies. Given that the Chinese government has long looked at technology and ICT as a crucial tool for strengthening and supporting the development of the country, I aim at illuminating the micro-level details of this experience, and at shifting the perspective on ICT in rural/underdeveloped/emerging areas from 'what can ICT bring to people at the margins' to 'how do people at the margins see ICT and adapt it to their circumstances.'

My work contributes to theory building by expanding the categories proposed by domestication theory in order to fit a non-Western environment. Although Silverstone writes that:

> "(The media and information technologies of the twentieth century) provide a means both for the integration of the household into the consumer culture of modern society—into a national as well as an international culture—and for the assertion of an individual's, a household's or an island's own identity: a domestic as well as a local culture." (Silverstone & Hirsch, 1992:3)

domestication theory has remained firmly grounded on the social circumstances of Western countries. The following chapters will be loosely organized around the different phases of the domestication process—commodification/appropriation, objectification and incorporation, and conversion, and in analyzing my findings under these theoretical categories, I extend and complicate them.

In chapter three, "Traveling ICT," I discuss how ICT is imagined and acquired by migrant workers and rural residents. In domestication theory, consumers are expected to start imagining ICT objects as parts of their lives, and then to acquire them—the phases of commodification and appropriation. This is what happens for many migrant workers once they are in urban areas and immersed in a world where advertising, shops, and ubiquitous ICT use provide them with concrete examples of ICT and ways of acquiring it. But in the countryside, it is a different story. There are increasing numbers of mobile phones, but advertising and the distribution and retail system that exists in the city are largely absent, and there are many people who do not consider themselves to be part of consumer society. These are the unimagined users I describe above, typically older people and women without much disposable income. They are dependent on other people to acquire ICT, from returned migrants to family members with money and the authority to spend it, and they are variously eager and reluctant to own a mobile phone. A user who has never imagined herself a user and who suddenly acquires a mobile phone begins the road to domestication in a very different manner than a user who did imagine and plan the entrance of the device into his (and in the countryside such user is typically male) life. The phone, especially if gifted, is fraught with tensions around ownership, duty, and gratitude, and not always a good fit with the new owner's lifestyle, for example a smartphone that is too hard to operate for an older or less educated person, an urban phone that lacks features that are still popular in the countryside such as the radio or the flashlight. These tensions become embedded in the object, and val-

ues and uses that are expected by domestication theory to emerge only in later phases may already be present at the onset of ownership.

Objectification, that is the process through which an object finds its physical place in the home, and incorporation, which is how it finds its modality of use in the household, are the subject of chapter four, "The Sent-Down internet." Here I enlarge my focus to include internet-enabled computers, still rare but becoming more common, and the double role they play: first as objects that represent urban life and modernity, and secondly as media devices through which the external world enters the lives of their owners and is reconfigured according to their values and experiences. In traditional domestication theory, this phase is expected to take place after appropriation, in a linear manner. The ICT object may be purchased by an individual member of the household, but the entire family participates in its objectification and incorporation: physical space is negotiated (Where will the television go? Where can conversations on the mobile phone take place?) as are usages (Who controls the remote? What are the rules around the use of mobile phones in family life?). But once again, this pattern does not necessarily fit the organization of life in rural China. Family members may be excluded from or unaware of the purchase until it appears in the household. They may not have a say in the where and how of its use. This can exclude them from participating to the incorporation of the object in the household, or can be a chance for them to observe ICT use from up-close, and start imagining whether it is something that could fit their lives. Parallel to the process of objectification and incorporation for some members of the family, the process of appropriation starts for others. Once again, migrant workers (and younger family members, more exposed to ICT through school and internet cafes) become the bridge between the external world and the household, and are what most shapes the imaginary of unimagined users. I include intermediation as an extension of incorporation because for some users incorporation happens only through the intermediation of a family member. A computer becomes what migrants use it for, not what its designers and marketers planned and sold it for. Consumer culture becomes heavily mediated by personal ties—which are also supported by ICT. The maintenance of the "networks of intimacy" between urban and rural areas that I describe above is in fact a key function of both computers and mobile phones. New technologies and family networks bring slices of urban life and modernity to the countryside, in the form of news, opportunities, information, and fashions which find a fertile ground in villages that are often otherwise depicted as poor and backwards, but are also characterized by strong social bonds and a sense of community that allows for the rapid circulation and sharing of new information. In this chapter, I argue that the combination of new technologies and personal networks are a powerful but often overlooked way to share some aspects of urban growth with the countryside.

In chapter five, I discuss the limitations of the household not as a unit of analysis as critics of domestication theory typically do, but rather as the vehicle for bringing ICT to the countryside. If migrants can transform family members from unimagined users into actual users by providing ICT and examples of how to use it, they can also limit their potential uses. ICT are tied to the specific and situated modes of use: if a migrant has learned how to use the internet in an urban environment, perhaps in an internet cafe from peers, or at work from a supervisor, the way she will use it will typically reflect that history, with an emphasis on entertainment, or on using specific sites for (urban) work. Rural residents learn to use ICT from their

city-savvy family members, and as a result they tend to use it in the context of family rela-tions, and to pursue the activities they have learned from their relatives. But shifting the focus from the family to a different unit of analysis—the farming community of practice where different social hierarchies, and different ways of learning are in place—will result in a break-down in the incorporation of ICT in daily activities. Smallhold farmers seldom use their mo-bile phones (or, in rare cases, computers) for anything related to their farming activities, and I argue that this is perfectly logical once one understands that farming is mostly organized around the oral, face-to-face sharing of information among people who know each other. This does not easily translate into ICT use (especially as defined by the informatization policies that target farmers, and emphasize seeking information online), and, most importantly, is not an activity that family members who bring ICT to the countryside experience first-hand and can help support.

The final chapter engages with the double function (or double articulation, as domestication theory defines it) that ICT have as objects with a very specific 'public' meaning (urbanization, modernity, good "quality" or sùzhì 素质) and as media that carry parts of this meaning into the countryside. Once the object is incorporated into the household, it serves the function of "reconnect(ing) the household into the public world of shared meanings and the claims and counterclaims of status and belonging" (Silverstone & Haddon, 1996:65). In this chapter, I go back to the historical legacies of Chinese 'essence' (*tǐ* 体) and foreign 'means' (*yòng* 用) described above, and argue that the attitude that migrant workers and rural residents have towards ICT as symbols of development and as tools that can provide a chance to improve their low suzhi is a result of this engagement of the Chinese state with Western technol-ogy and a reflection of the most recent policies for the informatization of the countryside. Instead of analyzing rural suzhi and development from the top-down perspective that has characterized Chinese attempts to integrate Western technology into society since the late Qing dynasty, I take the bottom-up perspective of the domestication process. I show how the state's discourse on the 'low quality' of the countryside influences the self-image of rural resi-dents, but also how there is a form of resistance and self-definition through technology which represents a true, grass-roots effort to maintain a local 'essence' in the use of technologies perceived as 'foreign' because they come from urban areas, not because they were initially developed in the West.

My overarching goal, therefore, is twofold. On the one hand, to extend domestication theory to unimagined users in the Chinese countryside and to show that, by enlarging the theory's scope to include behaviors and circumstances that may be more common in emerging re-gions than in the Western context in which the theory was created, it can become a powerful lens through which to understand ICT circulation, adoption, and use in a family and small community context, rather than just in the usual individualistic one. On the other hand, I offer domestication as a counter-narrative to the dominant discourse on ICT and its role in the development of the countryside. My findings show that informatization policies, rather than directly in the economic development of the countryside, have so far unexpectedly resulted in the strengthening of the familial and personal networks commonly present in rural villages and often lamented as being broken by the dual forces of migration and urbanization. These ties are helping to bring the countryside closer to the city, partly because of the constant physical and virtual circulation of people, goods, and information. The real success of the

informatization of the countryside might just be in the shortening of the imagined distance between the urban and the rural.

Before delving into the domestication process of 'rural ICT,' it is useful to introduce the places where my research took place—Beijing and the countryside of Hebei and Shandong—and the ethnographic methods that I used and that led me to the interviewees and to the three villages that are the center of this narrative. In the next chapter, I will do so by describing at length my encounters with migrant workers in Beijing; how these migrants led me to their families in the countryside; and issues of gender, power, categories of thought, and language that have shaped my apprenticeship as ethnographer.

Endnotes

1. At the beginning of the First World War, Japan declared war on Germany and swiftly proceeded to attack German concessions in China, mostly in Shandong province. In 1915, Japan issued the Twenty-One Demands to the young and fragile new Chinese republic, demanding extensive economic rights in Manchuria and Inner Mongolia, commercial rights in Fujian, and the stationing of Japanese police and economic advisers in North China. These demands were initially ratified by the victorious powers in the Versailles Peace Treaty in 1919, which resulted in mass protests in Beijing on May 4th, 1919 (hence the 'May 4th Movement'). The Twenty-One demands were partially annulled at the subsequent Washington Conference in 1921-22, which ended with a Nine-Power Treaty condemning spheres of foreign influence in China and acclaiming the preservation of the independence as well as the territorial and administrative unity of China. However, these events left the Chinese leadership well aware of its weakness, especially towards Japan (Spence, 1990).

2. An example of a standard developed in China is the mobile communication standard TD-SCDMA (Time Division-Synchronous Code Division Multiple Access), developed as a local alternative to 3G. (Zhao 2010).

3. The recently issued "National Human Rights Action Plan of China (2012-2015)" stresses once again the importance of ICT for the development of the country, and attempts to positioning cultural and "ICT" rights as a Chinese alternative to the discourse of human rights. The following sections are particularly representative:

   (6) Cultural rights

   The Outline of the National Plan for Cultural Reform and Development of the 12th Five-Year Plan Period will be implemented. Effective measures will be taken to accelerate the construction of public cultural facilities, promote the development of cultural undertakings, enrich the people's cultural life and guarantee the citizens' cultural rights.

   Radio and TV broadcasts will be available in all villages with no more than 20 households each and where electricity is available, covering 99 percent of China's population. The cultural information resource sharing project will reach 530 TB in digital resources, shared by 50 percent of all households. Mobile cinemas in rural areas will reach 50,000, showing one digital movie every month in every administrative village. Migrant workers will be brought into the urban public cultural service system; and enterprises and communities are guided to actively hold cultural activities geared towards migrant workers.

   - Promoting culture coverage and popularization of science and technology.

   By 2015, each Chinese citizen will have, on average, 5.8 books and 3.1 periodicals every year; every 1,000 people will have 100 daily newspapers; every 10,000 people will share 1.3 publication outlets, and the number of people who read books or periodicals will reach 80 percent of the total population. China will also accelerate the construction of farmers' libraries, and urban and rural newspaper reading boards. China will enact the Law on Science and Technology Progress and the Law on Popularization of Science and Technology, formulate standards on citizens' scientific knowledge, promote the building of venues for popularizing science knowledge and launch the construction of the National Demonstration Base for Science Popularization.

- Accelerating internet construction.

By 2015 over 45 percent of China's population will have access to the internet. The fixed broadband ports will exceed 370 million. The internet connection speed for urban households will reach 20 Mb/s, and that for rural households, 4 Mb/s. Fiber optic internet connection will cover 200 million households. In addition, China will build wireless broadband cities, and gradually spread internet connections and usage throughout the rural areas.

4. The Central Government set the general goals and frameworks in the 2006-2020 Strategic Plan and Five-year plans mentioned above, as well as in the yearly "No. 1" documents. Relevant ministries such as the Ministry of Agriculture and the Ministry of Industry and Information Technology issue frameworks to give a more specific shape to the abstract guidelines of the Central Government, but often without offering practical goals and specific mechanisms for cooperation and funding. The actual implementation of all these high-level policies is left to the individual provinces and local administrations, and in the past years there has been a variety of approaches, with no effort at coordination. Although it is difficult to find concrete and reliable information about all the different plans and their implementation, there are at least two common approaches: the first is to increase the offer of information through the creation of specialized websites; the second is to build a network of 'information service stations' that provide access to computers and other informational material, and training, and that leverage existing infrastructure, such as government offices, agricultural extensions, etc. (Zhong, 2004) has identified three information service models: service stations, farmers' homes as one-stop information suppliers, and farmers associations. Service stations are set up by local governments in counties, townships and villages, and provide different types of locally-relevant information. At a county-level, service stations should have a computer and printer, a designated telephone line, and an information worker to help users find information. The farmers' homes model, despite its name, seems to integrate the information station model within an existing commercial activity, for example a seed shop offering an "expert consultation desk," but it is unclear whether there is any kind of government support or non-commercially-driven information available. Finally, farmers associations are membership-based cooperatives that offer their members information, marketing services, and that act as business support groups; some have computers with internet access, and they provide their members with information and technical training. They are usually supported by government funding, at least in the initial phase, and then rely on membership fees for maintenance. They have a narrow but very targeted audience, rather than the entire population, but they can be very effective because they have clear goals and immediate and actionable user feedback.

5. According to official sources, by the end of 2009, 99.86% of administrative villages and 93.4% of 'natural villages' (e.g. de facto villages, rather than administrative entities) had access to a landline (MIIT, 2010); in 2008, 95.4% of the country had access to radio broadcasts and 96.6% to television (SARFT, 2008).

6. For example, when the personal computer was in its infancy, in the early 1980s, the UK government created a policy to distribute microcomputers to every secondary school, and in which schools were invited to 'Buy British' brands, in what was at the time a widespread policy in information technology (Murdock 1992:153). And such policies create their own momentum, where the technology itself, rather than the social, economic, and political infrastructures around it is identified with the future and with progress.

7. For example, the famous Four Inventions (*sì dà fāmíng* 四大发明): the compass, gunpowder, papermaking, and printing.

8. Since 2001, there have been several pilot projects in different towns that have allowed migrant workers to register as urban residents under certain conditions, and some provinces have been experimenting with the devolution of residency regulations to local entities, rather than the provincial government (Chan & Buckingham, 2008). More and more people are staying in cities despite all the legal obstacles, but they still do not have the same access to urban privileges that those with urban hukou do (Connelly, Roberts, & Zheng, 2011).

9. Cartier et al. are themselves rather casual in their use of the term. At first they define "information have-less" as those who lack access to more sophisticated ICT, and therefore use low-end, semi-mobile phones such as Little Smart instead of high-end ones, use computers in internet cafes rather than owning them, and buy cheap, pre-paid mobile phone cards instead of having contracts. The expression, however, is used interchangeably with "have-less ICT" and "have-less users" (Cartier et al., 2005:11), although their examples all refer to the type of devices these people have access to, rather than to their use.

10. This strand of scholarship extends to non-Western countries what has been a traditional concern of Social Studies of Technology, i.e. the involvement of users in adapting technologies to their lives beyond the intentions of technology designers. There is a rich vein of historical studies looking at users subverting the goals of technology creators and marketers and becoming "agents of technological change," in Kline and Pinch's definition (Kline & Pinch, 1996:764; Cowan, 1997; Fischer, 1988, 1994), or becoming co-constructors of the technological object (Wiebe E. Bijker, Hughes, & Pinch, 1989; Wieber E. Bijker, 1997).

2 | Locating People, Objects, and Places

"My view of China does not, by a long shot, reflect the views of all the people with whom I have talked. My ethnographic work represents my understanding of China as a result of conversations held and conversations overheard. Some of these conversations were foolish and ill-informed, and a few were designed to mislead; other conversations were with or between people who had only a superficial understanding of a topic—no matter how deep their understanding of other areas of life might be (…) I still see my ethnographic responsibility as including an effort to make sense out of what I saw, was told, or read—first for myself and then for my readers." (Wolf, 1992:4-5)

1. Introduction

This ethnography began in Beijing in the summer of 2007, when I carried out what was meant to be a short-term research project on behalf of Intel on the social uses of ICT among young rural-to-urban migrant women in Beijing. I returned to Beijing in the summer of 2009, and after finding again most of my original informants and recruiting new ones, I continued fieldwork throughout 2010 and in the summer of 2011. In order to reconstruct the connections that exist between Beijing and rural areas, I followed the paths taken between these two places by both migrants and mobile phones, tracing the connections that were being woven by ICT between urban and rural China. In this chapter, I will introduce the people and the places who are the protagonists of this research, and discuss a few issues related to methods and doing research in China that are important to understand my findings and conclusions.

2. From the Center to the Periphery

2.1 Beijing: Migrant Women and the Service Sector

Ms. Wang was my first interviewee in Beijing.[1] I had known her since my first days of living there as the efficient and rather forbidding young woman in charge of the reception desk at the international student dorm in a university. She did not speak English, but in the course of her years working at the university she had developed a formidable capacity to understand the a-tonal and ungrammatical Chinese spoken by foreign students from all over the world, who insisted on twisting the language in endless new ways. She had always seemed extremely patient, but also very straight-forward and quite detached in her dealing with her chaotic and demanding job. I myself had been rather intimidated by her curt replies when I had tried to make casual conversation before I started my research, and I had been surprised and skeptical when a friend who worked as an administrator in the same university had suggested her as an ideal 'Virgil' for my research.

While living in Beijing before doing fieldwork, I had been immersed in a world populated by migrant workers, but they had always been part of the 'invisible human infrastructure' that keeps the city running, and that goes largely unnoticed: an army of shop clerks, cleaners, security guards, and service sector workers. My colleagues and friends were usually educated, urban people with all sorts of jobs, but none did manual labor; they had the typical concerns of the emerging Chinese middle class, such as getting a job worthy of their university degrees, buying a flat, and finding decent and affordable healthcare. I knew that the Chinese economic miracle visible in Beijing was mostly being powered by millions of rural-to-urban migrant workers, and that women represented a significant percentage of this "floating population," (Solinger, 1999), but I had never spent the time to get to know any of them.

I met with Ms. Wang and Ms. Long, another young migrant woman working in the same university, on my very first week of fieldwork in June 2007. Their reactions to my research represented the two extremes that I subsequently noticed among my research participants. Ms. Long, the younger and more extrovert of the two, was enthusiastic and excited to be interviewed, and immediately started planning a series of social activities in which I could join. Ms. Wang was more reserved and rather skeptical about the project, saying that she did not have much time off, she did not like to socialize, and anyway was not using much ICT, so she did not think she would make a useful informant. But out of kindness, and possibly a sense of duty towards the person who had made the introduction, she agreed to talk to me and eventually to let me participate in some of her social activities and see her ICT use. In the course of time, as trust built, she became a very thoughtful and engaging informant, often acting as an 'interpreter' of the behavior and choices of her younger colleagues. Because I already knew her and Ms. Long superficially, and we were introduced by a person they both trusted, we already had some rapport in place, and I was able to start interviewing and 'hanging out' with them right away, while I was looking for other informants. Both Ms. Wang and Ms. Long spoke the very clear and straight-forward standard Chinese of people used to speaking with foreigners, and were a great help in reformulating my questions in ways that were more colloquial, and related better to their lives. I will discuss later the implications of doing ethnographic research in a foreign language; but in Beijing, among these young women, language never felt like a barrier.

Ms. Wang was 23 years old at the time, and had already been in Beijing for seven years. Her family was from Shanxi, a province south-west of Beijing. When she was still in school, her parents and elder brother had all moved to Beijing to work at the university, but she had stayed behind with her grandparents to finish middle school. Her parents would have liked her to graduate from high school, but she wanted to live with them again, and did not like going to school. Once she re-joined her family, she also found a job at the university, first as a waitress, and then, through a series of promotions, at the reception desk in the international student building. This was a rather coveted job, as both she and Ms. Long informed me, because foreign students did not know the difference between urban and rural people, and did not single them out as girls from the countryside, as many local students did. A few years after our first encounter, Ms. Wang expressed regret at not graduating from high school, because it was proving to be a problem for her job: she was extremely competent and very reliable, and her superiors wanted to promote her, but she needed a diploma to move on. By that time, she did not really have the leisure of taking classes when she was off work: she had

married a Beijing resident—a much sought-after type of marriage among migrant women, because it gives them access to an urban *hukou*—and had moved in with his parents, so she had to take care of the household in addition to working full-time.

In 2007, Ms. Long was 20 years old, and had been in Beijing for three years. She had left her village in Shandong after graduating from middle school, following a recruiter who had come to her school to hire young women for the university. Beijing was a common destination for her co-villagers, and she knew and occasionally saw several of them in the city. The idea of migrating to work before finishing high school had not been hers. Although her father was also a migrant worker, he was not making enough money to support the family back home, which consisted of his parents, his wife, and Ms. Long's two younger siblings. Ms. Long would have liked to stay in school, but she felt it was her duty as the eldest daughter to help out and to try to keep her other siblings in school longer. After a few months in Beijing, her father called her because she hadn't been sending any money home. When she recalled the episode, she told me that she had been simply overwhelmed by the (shopping) possibilities that the city offered, compared to the village where she grew up, and had been spending money as fast as she earned it. After lengthy negotiations, her father agreed that she would send half of her pay home (at the time, about CNY6,000 per year, close to USD800) and keep the other half for herself. She then started sending money back more or less regularly, but admitted that she was often sending less than she was supposed to do. As we will see in the next chapter, she also brought money and gifts to her family when she visited them, but both were fraught with unresolved tensions around power and independence.

I am describing some details of the lives of Ms. Wang and Ms. Long because they represent the essence of a long-running pattern of internal migration: young, unmarried women who go (or are sent) to work in cities in order to help support their families back home. Financial motives have been the main driver of the mass migration that started in the 1980s with Deng Xiaoping's economic reforms. Initially, migrants were mostly men, but they were soon joined by women, who in 2000 were thought to represent a percentage of the total number of internal migrants that ranged from a third (Connelly, Roberts, & Zheng, 2010) to over half (Liang & Chen, 2004).[2] Women mentioned the chance to "see the world and have a taste of freedom" as an important reason for leaving their place of origin, much more so than men (Jacka, 2006), and "to see the world" (*kàn shìjiè* 看世界) was the almost unanimous reply that my informants gave to the question of why they had come to Beijing. Usually, women who migrate "to see the world" or for other reasons send money back home. Among my interviewees, however, many did not need to do so, because their parents were migrant workers themselves and earned enough to support the family, or had enough income from small businesses they set up in their home villages, or even from farming. Many of these young women had moved to Beijing to fulfill their ambitions, to find better jobs than the ones available in the countryside, and to improve their chances in life. This was particularly true of the informants I found after Ms. Wang and Ms. Long. These women, who were introduced to me by friends, or whom I met in my wanderings through the city seeking suitable research participants, all worked in the private sector, and changed jobs often. They made more money than Ms. Wang and Ms. Long, and could (and did) take more risks because they did not have any financial obligations towards their families back home. They worked in beauty shops (Ms. Song and her cousin, Ms. Lang, both from Anhui, and Ms. Wei, from Shaanxi), small offices

(Ms. Ouyang, from Hebei), and massage parlors (Ms. Wu and Ms. Ling, from Shanxi, who for a short time had their own massage place with five other women they had met in Beijing). They were all in their early 20s when I first met them, had been in Beijing for anything from six months to seven years, and were animated by ambitions that in the time I knew them were either fulfilled, changed by their environment and circumstances, or, sadly, unrealized.

These informants all worked in the service sector, an unusual demographic in studies of migrant workers in China, which tend to focus on factory workers in the South or in coastal areas. Although there are many similarities among the two groups, there are at least two crucial differences, which are significant for understanding their ICT use. First of all, people employed in the service sector work and live according to a very different schedule than those working in factories. While the latter's lives are dominated by the clock (Lee, 1998), the patterns in the service sector are much more fluid. Waiting for clients in a beauty salon—at work, but not working—sometimes takes up most of the day; if there are clients at closing time, then work continues until they leave. Passing time, in the sense of not doing productive work, but rather just sitting around at the workplace and waiting, is an important aspect of these women's experience. Secondly, women working in factories live away from the city center, in peripheral areas where typically there are only other factories and a few basic shops. They spend most of their time there, among other migrant workers, separated from the everyday life of the city. Women working in the service industry live everywhere in the city, even when they stay in dorms close to their workplace provided by their employers (as all but one of my interviewees did in 2007). They live in the city in a manner that is unknown to their colleagues living in factories, and although they do not intermingle very much with 'proper' urban dwellers, they build stronger and more lasting ties with urban life than other migrants. They also have more freedom than many factory workers: most of my interviewees came to the city on their own, and once there, lived in small groups, which meant that they were freer from the what Lee identifies as the "(despotic) localistic networks" that still characterize most internal female migration in China (Ibid).[3] In other words, once in Beijing they were not tied to their co-villagers as factory workers often are, and they could create new networks and new communities with migrant workers from other provinces and working in different sectors. They were also more free to experiment with city life, away from the controlling gaze of co-villagers who would report back to their families the details of their urban life. Thus, they often become a new type of urban resident, who maintains ties with fellow co-villagers and the countryside by choice, and at the same time creates a new life and a new network of relationships in the city. Ms. Wu is such a person: she has known Ms. Ling since they were little girls, they came to Beijing together, at times have worked in the same place and even tried to set up their own business, and they still visit their home village together. Ms. Wu has also created new, strong ties with people she has met in Beijing, exposing her to a variety of influences. Her link to her village allows her to bring back these different urban perspectives to the countryside.

Most of the women discussed so far were part of my 2007 project, and at the time I did not imagine that I would be able to remain in touch with them once I left Beijing. None of them used email, nor the internet regularly enough. I imagined that some of them would go back home, or change jobs, and that they would all have different phone numbers and there would be no way to get back in touch. But things turned out very differently.

2.2 Beijing: Expanding the Pool of Informants

In my second bout of research in Beijing, in the summer of 2009, I decided to enlarge my informant pool to women who are usually not considered part of the "floating population," but who are nevertheless rural-to-urban migrants: university graduates. These are the elite of migrants: they arrive in urban areas for their university studies, and after graduation their education level and skills allow them to easily find the kind of jobs that come with an urban *hukou* (Fan, 2001).[4] And yet, many of them maintain as strong a tie with the countryside as their working-class peers, visiting their home village during the holidays (or paying for family members to come and visit them in the city) and keeping in touch via ICT with family members and former classmates who had migrated to other places. Through personal connections, I met and interviewed a number of such people in Beijing—both men and women. One of them, Ms. Yang, invited me back to her home village in Hebei, which became one of the rural sites for my research.

While pursuing this new research venue, I was also surprised to find again five of my original six informants. Only one had gone back to her village for good, at least according to her colleagues—although I learned in the course of my research that when I was told that someone had 'returned home' (*huí jiā* 回家), the expression covered everything from 'changed job' to 'got married and lives in another province' to 'does not want to talk to you' to, rarely, 'actually went home for a visit and will be back soon.' The women had become even more urbanized than they were in 2007, and one of them, Ms. Ling, had even started paying for her parents to come and visit her in Beijing rather than going back home. But even though some of them started mentioning Beijing as their new home town, most maintained strong ties with their families, and ICT played an important role in this intimacy maintenance work. There were regular calls to the mobiles of parents, especially mothers, and constant contact with younger siblings, former classmates, and friends through SMS, instant messages, and social networks. These relationships were often halfway between strong and weak ties (Granovetter, 1983). They were not used to find jobs directly as weak ties are typically expected to be, in Granovetter's definition—this was still done offline, through word of mouth, or personal introductions, or time-tested means like ads posted in public places, both in the countryside and in the city. Yet, they were not exactly the "densely knit clump of social structure" that defines strong ties (Ibid:202). They were rather connections that helped to create a sense of stability and belonging for women who could feel rather uprooted in a fast-changing and not very welcoming urban environment, where colleagues and friends disappeared as soon as they changed jobs or moved to a different neighborhood too far to reach by public transport. For their correspondents in the countryside, these ties provided an opportunity to participate, from afar and by proxy, in the excitement of urban life, but also to see its drawbacks.

In interviews and casual conversations, both the 2007 and the 2009 informants frequently mentioned that they had owned several mobile phones in their years in the city, and while some had been stolen or broken, many others had been given to relatives back home. Some had even bought brand new phones for their parents. It was then not only migrants, but the physical objects themselves that traced a network between urban and rural China, through which people, goods, and information travelled back and forth. Migrants would go back to the countryside for Spring Festival bringing urban gifts such as money, ICT devices, clothes,

and appliances, and return with yams, peanuts, and oil.[5] Information, updates, snippets of life would travel back and forth through ICT even when the people stayed still. Over the course of 2010 and 2011, I expanded my field site by following the travels of a few of these mobile phones, in order to reconstruct their "cultural biography" and understand the social relations supported by them (Kopytoff, 1986), and which I will describe more in depth in section four. I went back home with my interviewees from Beijing to two villages in Shandong Province (which I refer to as Village A and Village B) and one in Hebei Province (Village C), all between three and ten hours travel by train and bus from Beijing. The first visit I paid to each village was always with an informant. Once there, I stayed with her family, and spent time getting to know them and the village, and participating in whatever activity was going on at the time. In the winter, which is rest season for farmers, I went along for visits to relatives and neighbors, or to leisurely outings to nearby markets and towns. In the summer, I participated in farm work in two of the three villages. The villages, as I'll explain more in detail below, were inhabited mostly by older people, children, and middle-aged women. People between the age of 18 and 40 had typically migrated to near and far urban areas. Sometimes women came back when pregnant to stay with their or their husband's family, and occasionally would remain until their child was a two- or three-year old, but then would join their husbands again, often leaving the child with grandparents. It is very common throughout the Chinese countryside to find villages inhabited exclusively by old people and young children (Chang, Dong, & MacPhail, 2011; Ye & Lu, 2011; Ye, 2011). Among the three villages, the best representative of this phenomenon was Village A, the smallest and more isolated of the three. The other two were closer to paved roads, transportation, and towns, and several people commuted to urban jobs. In these villages, I was able to find younger interviewees, and young families living a rural life, but with urban jobs.

Follow-up stays in the villages were not always accompanied by the original urban informant, but I always went back to the informant's family and house. After the first visit, I began doing semi-structured interviews, in addition to continuing participatory observation, and carrying out casual conversations with my informants' relatives and neighbors, especially those who had received mobile phones from migrants, and with other villagers, including shop keepers and passing traders. These conversations sometimes led me back to Beijing, to find and interview a relative who had gifted a mobile phone to a rural resident. For example, Mr. Liu, a farmer in Village B, had received his mobile phone from his daughter who lived in Beijing; after interviewing him in the village, I met and interviewed his daughter in the city, and through her introduction I exchanged messages with her sister who lived in a different town.

2.3 The Three Villages

Village A

Village A is located in the western part of Shandong Province, about two and a half hours from the city of Liaocheng, which itself was a five-hour train/11 hour bus trip from Beijing. The landscape from Beijing to Liaocheng is perfectly flat, a monotonous sequence of fields—dried earth in winter, green wheat in spring, corn and peanuts in the summer and early fall. The fields are broken up by edges of acacia, and dotted by small villages of traditional, mud-colored buildings, and newly-built towns with an improvised and neglected air about

them. In the southern part of Hebei and in Shandong one can catch glimpses of old traditions in the burial mounds located at the corners of the fields, or gathered together in a patch near the village, despite all the regulations that forbid such practices. The freeway has four lanes, the smooth asphalt of rarely used roads, and rest areas equipped with restaurants, supermarkets, toilets and sometimes hotels. However, it is mostly a ghost freeway. Private cars are few and far between. Most of the traffic consists of trucks and buses bringing migrants back and forth between countryside and city. In the rest areas, restaurants are deserted, as everybody brings their own lunch from home. The only crowded area is in front of the toilets: everything else is too expensive for the average traveler.

Public transport does not reach Village A directly. There is a bus that goes from the county to a nearby village, where passengers are picked up by bicycles and motorcycles. Dirt roads lead to the village, easy-going for scooters, but narrow and bumpy for cars. Village A has about 200 official inhabitants, but only 60 permanent ones, mostly older people and women with small children. The houses are all single-family (whether nuclear or enlarged family) units, with a small courtyard enclosed by a wall. They are laid out on a grid, with three main roads (appropriately called the Front Road, the Middle Road, and the Back Road) connected by a network of small cross-cutting paths, which become mostly impassable whenever it rains. The back road leads to the village temple, which was built in the 1990s but has already acquired a patina of dirt and disrepair which makes it look like an ancient relic. The houses are a mix of old-style, small, brick dwellings, where older people typically live; restored houses,

FIGURE 1: **The cities closest to the three villages**

rebuilt in cement, owned by families whose members include migrants, and who therefore have more disposable income; and abandoned houses that belong to families who have left and are unlikely to come back. En masse migration started in the early 2000s, and the main destinations are Shanghai, Qingdao and Beijing. Migrants typically come back to visit during Spring Festival, but those who are not too far away come for shorter visits throughout the year, especially to help with farming work at harvest time. The village has no store, and itinerant traders stop by every day to sell food, or to buy agricultural products from the villagers.

Village B

Village B is also in western Shandong, but further north, close to the city of Dezhou. The village is located between the city and the county seat, and a two-lane paved road connects it conveniently to both. The village, of about 400 inhabitants, has well-kept dirt roads, an elementary school, both traditional and western-medicine doctors, and a few shops. Migration is widespread, but because there are many opportunities nearby, there is a mix of medium-long range migrants and short-range commuters (although interviewees used the same expression (*chūqu dǎgōng* 出去打工) to describe any type of work outside the village). Houses are, on average, newer, bigger, and in better condition than those in Village A. Old-style, traditional compounds have almost entirely disappeared, and many buildings were restored or rebuilt already in the 1990s, a tangible sign of how villagers here had access to non-farming jobs and opportunities before those living in Village A. Everybody has a piece of land, but agriculture is a side-activity for most families. Farming is a rather relaxed affair nowadays, thanks to the small size of the plots and the widespread mechanization

FIGURE 2: **Old and new houses along a dirt road in Village B**

of the hardest activities. Most young and middle-aged people have other jobs, sometimes local, especially in construction, sometimes in nearby urban areas, sometimes as temporary migrants.

Village C

FIGURE 3: **Google Earth image of Village C**

Village C is in Hebei province, and so close to the fast-growing county of Ding-zhou that it is likely that it will become part of it in the near future. Seven to eight hundred people live in the village, and most of them both farm and hold non-farming jobs nearby, or have small manufacturing activities in their backyards. The age spread of residents is more balanced than in the Shandong villages, because long-range migration is not very common, so there are many more 'whole' families, where parents, children and often grandparents all live in the same compound. A long and well-kept dirt road leads to the village from the main provincial road. It expands in a regular grid, populated by one-storey houses with the usual wall around them, and then peters out towards the fields in two directions, and towards another village in a third.

Many houses in the village have a small smelter in their courtyard, to make machinery components, especially iron wheels. This activity became widespread in the 1990s, when factories in the nearby city started to expand so much that they could not keep up with the production, and had to sub-contract parts of it. The family of Ms. Yang, my hosts in the village, started such an activity early on. She and her brother were in school, and income from farming was not sufficient to pay for all the expenses. Her father built a small smelter, and took on that job full-time, even hiring a couple of people to help at peak times. Her mother kept looking after the fields. The proximity of the village to urban areas has meant access to economic opportunities such as these; in the past, it meant early access to infrastructure. The electrical grid reached the village in the 50s, but arrived in Village B only in the 80s, and in Village A even later.

In 2010, all three villages had electricity, telephone landlines, and good mobile phone coverage. In Village B and Village C there were ADSL internet connections, which reached Village A the following year—although when I visited, there was only one family subscribing to it, and the connection was down during the entire time of my visit.

3. Gender and Power Relationships

My work with women started almost by chance, because, as a foreigner, as a female, and as someone who had lived in Beijing and had many local contacts, I had relatively easy access to this particular segment of the population. Early on, I was interested in focusing on women's engagement with and understanding of ICT because existing research tended to (and to a certain extent still does) focus on "Chinese users" that seemingly had no gender (Bu, 2012). In time, however, I realized that looking at women's—in fact, marginalized women's—use of ICT was useful to gain a new perspective on the role that ICT plays in Chinese society as a whole. In other words, a focus on migrant women is not only a matter of filling a research gap in order to provide a fuller picture, it is a matter of changing the whole picture by looking at it from a different perspective. When studying work in late Imperial China from women's perspective rather than men's, Bray changed the perception of work practices and gender division in Chinese society as a whole (Bray, 1997). Regarding technology, she argued that it "is a form of cultural expression, and as such plays a key role in the creation and transmission of ideology… Changes in technology create social tension, requiring a reconfiguration or renegotiation of these complex, interlocking patterns of difference." (Ibid:369). This was true for technology in late Imperial China, as it is for ICT in contemporary times. Furthermore: once research on Chinese internal migration started to study women instead of a gender-free, universal 'migrant worker,' a whole new understanding of the migration experience for women as well as for men began to emerge (Lee, 1998). And, as Lee and others have pointed out, migrant worker networks are often 'gendered,' with migrant women recruiting younger women from their village, and men recruiting men. Even before mobile phones became common and made remaining in touch with people back home easier, women tended to maintain strong re-

FIGURE 4: **A backyard smelter in Village C**

lationships with their families and their places of origins, and particularly with other women. There often was, and still is, a sense of mutual responsibility, and an availability to help their 'sisters' left in the village find a way out of it.[6] At the same time, the migration experience has represented for women a chance to find emancipation from the control of their kin, and to achieve a new position of importance in the family dynamics because of the remittances sent back, as pointed out by many scholars and as will become clear in chapter three.

All these factors made focusing on women an ideal starting point. In Beijing, my main informants were all women, but I often saw them in mixed-gender contexts. I met and talked to their boyfriends, and extended my participant observation and interviews to a few migrant men, also working in the service sector. These were all young people, with a similar level of education and similar jobs. There were some differences in their use of ICT, in particular as far as internet cafes were concerned, but there were no remarkable differences in how they related to me.

In the villages, however, there was a profound difference in how women and men, especially older men, related to me as a guest and as a researcher. Women easily accepted my curiosity about the mundane: what their houses were like, who chose the furniture, how their fields were cultivated, what kind of phones and computers they had, how they used them, whom they called and how often, and they allowed me to hang around when they had visitors or went to the market. They also reciprocated with a similar, open curiosity towards me that was deeply centered on the personal: what was my house like; why did I wear such plain clothes; were my parents farmers; did I have siblings; did I have my own family and children; and why was I still a student. Most men, especially those who had a certain status in the villages, determinedly refused to engage with the personal sphere. They would incessantly ask me comparative questions (is China better than America? Are houses in the villages bigger than your apartment in Beijing?) and their answers to questions on ICT, on farming, or on any other topic they knew I was asking women about invariably began with "Here's how Chinese people do xyz" and never contained any personal element.

With time, I came to see this different way of answering questions as an indication of other differences between women's and men's position in the local society. Many of the women I talked to were either older women who had never migrated, or were younger ones who had come back and were living with their in-laws. Their position within the village was largely subordinated to men's, and this was reflected in their being cautious about making any kind of generalized statement about anything, or, when it came to ICT, even acknowledging their use of it. Their typical answer to any question that had to do with ICT included variations of the following: "I really don't know enough about it;" "women don't use technology well, men have a more natural inclination towards it;" "I cannot do anything sophisticated, you should ask men because they can do more difficult things on the computer, and they understand it better." Older men, on the other hand, tended to bring the conversation to a general, more abstract, and often comparative plan: "Rural people use computers only for entertainment... Chinese people own less technology than Americans..."

These 'social differences' were also evident in how people reacted to me as a researcher in the village when I first arrived. If I was accompanied by a man, as happened in Village B, the

men I was introduced to let him do the talking, and limited themselves to smiling and observing me. If, however, my guide was a young woman, as in Village A, men immediately took charge and started asking me questions directly, ignoring my companion. When I showed up by myself, as happened when I visited neighboring villages while living in my field sites, women would often start talking to me and asking questions. This happened so regularly, that it was almost as if it followed a script. When I did a follow-up visit during the summer of 2011 in order to look at how the situation had changed, and to understand certain issues more in depth, I wanted to formally interview more men. I was interested in getting a fuller picture of technology use from both gender perspectives, but the interviews were much more difficult than the ones I had done with women. It took the good-will and the personal guanxi (relations) of the people who had gotten to know me in the previous year just to get a few 'volunteers' I could talk to. The material gathered from these difficult interviews made apparent two fundamental issues that are intertwined with ethnographic practice: the power relationships among informants themselves, and between informants and the researcher, and the extraneous presence of the researcher in her informants' social world. The men were in a position of power in the village, which however did not extend to the sphere of family and personal relationships, where women dominated (and invited me in). Men's power, moreover, did not extend directly to me. I was invited to their villages and homes by their female relatives, and although they may not have been happy about this, the rules of hospitality forced them to extend their welcome to me. I was more dependent on women's good will in introducing me to their neighbors, relatives, and friends, and letting me tag along during their activities, and this good will was rarely unforthcoming. The reluctance of men to engage with me as an interviewer was a way to reassert their authority in the social sphere, and to extend it to the foreigner and, as Wolf insightfully notes on the position of the foreign ethnographer in a Chinese village, I quickly learned to be deferential to people older then me and to males (Wolf, 1992:134). The evidence gathered in the interviews with males was biased by the fact that many clearly did not fully trust me, and to overcome such bias I triangulated my findings with the usual techniques used in this type of research: iterative observations and interviews with other people to find and confirm common themes, carried out until no more new themes emerged. And ultimately, even though the interviews were not the most illuminating that I did in the course of the research, they gave me a glimpse into a way of thinking about and relating to ICT that was slightly different from what I was hearing from women, and most importantly, gave me a fuller image of the context in which women used ICT. But the different ways in which men and women related to me highlighted what Wolf described as the messiness of field work:

> "Searching for patterns in behavior, a consistency in attitudes, the meaning of a casual conversation, is what anthropologists do, and they are nearly always dependent on a ragtag collection of facts and fantasies of an often small sample of a population from a fragment of historical time. When human behavior is the data, a tolerance for ambiguity, multiplicity, contradiction, and instability is essential." (Wolf, 1992:129)

The goal of ethnographic research is to find a thread that brings this messiness together in a cohesive form; but this, in turn, raises questions about the subjectivity and authority of the researcher. In the classic tradition, the anthropologist was an observer super partes, describing, rationalizing and explaining foreign cultures to his (or occasionally, her) readers. This idea has been challenged, by post-modern and feminist anthropologists first, and

by the radical change of the field site from a physically bounded area to an interconnected field that includes an increasingly complex entanglement of connections with the 'outside' (Lave, 2011). Lave describes the field work experience, especially for new and inexperienced researchers, as a process of apprenticeship where the apprentice ethnographer "breaks from naturalized, uncritical, commonsense conceptions of the world" (Ibid:12) to come to a critical theoretical position. Field work and the subsequent monograph are part of this transformative process that sees the researcher learn about her discipline and her methods as she learns about her research subjects, and in a sense my apprenticeship as a fledgling farmer mirrors my apprenticeship as a fledgling ethnographer. In the field and in writing, this process of transformation is represented by the plural identities of the researcher—in my case, as a foreigner in a position of (relative) power in Beijing because of my foreignness and because of my association with middle-class Chinese; as a foreigner depending on my hosts and rather powerless within local society (but maintaining the all-important power of being able to leave whenever I wanted to); and as an apprentice to both Chinese rural life and American academic life. Rosaldo sees these multiple identities as the key to "render obsolete the view of the utterly detached observer who looks down from on high" and to present a unified (as opposed to objective) analysis (Rosaldo, 1993:194), a position shared by Wolf who sees the role of the ethnographer as the seeker of multiple sources of knowledge who then "takes the responsibility for putting down the words, for converting their possibly fleeting opinions into a text." (Wolf, 1992:11). My goal is to present the conflicting opinions and events that I gathered in the field within my single viewpoint narrative, written so that readers can reach my same conclusions, while also leaving a door open to different ones.

4. Multiple Fields and Longitudinal Research

I described above the logistics of how I created my expanded field site by following mobile phones from Beijing to the countryside and then following the ties that are sustained through ICT back and forth between the two places. The boundaries of such a field, however, and their construction were particularly porous. The field itself became a mix of physical, fixed locations, travel routes, and media spaces—what Burrell calls a field site articulated as a network (Burrell, 2009). The physical sites, as I describe above, were selected by a combination of past history and connections (Beijing) and practical events (the three villages were the homes of women who still went back to visit, who did so relatively frequently, and who were amenable to bringing me back with them). The travel routes were retraced by following migrants back and forth when they visited, taking the train down to the countryside and the bus back to the city, and dealing with the perennial shortage of transportation that characterizes travel during peak times. The third element of the network consisted of parts of the mass media worlds that my informants frequented, from websites to television programs. As I will discuss in chapter six, the number of websites, online activities, and tv shows that I had access to was limited, and my entry point was always the physical, lived reality of my informants. In other words, I did not start my enquiry from a website, or a tv show, and then asked my informants about it, but rather, through participant observation, I encountered specific websites that appeared to be an important part of my informants' lives, and followed up with interviews and conversation about them to understand how practices grounded in the actual world related to behaviors online (Miller & Slater, 2000).

I did "follow the object" in order to recreate its "cultural biography," but also to find the relationships that were sustained, enabled, or made difficult by it, as it has become common in multi-sited fieldwork (Kopytoff, 1986; Marcus, 1995), but a mobile phone seems essentially different from the inanimate object evoked by Kopytoff. Like people, mobile phones bring their histories with them. More than people, they can be completely reinvented in a new place. So Ms. Long's mobile phone had 'inscripted' her Beijing life in the phone numbers she stored, in her photos, in photos of the places she had visited in the city, in the music she had downloaded, and in the games she had played. Once the phone was passed to her mother, and then later to her brother, it took on a new life—the mother looked at her daughter's photos to connect with her daughter's Beijing life, but slowly, as she learned how to take pictures by herself, she started deleting old ones. Other traces remained. The address book stayed intact, because she did not know how to use it, as did the music, as she never even found it in the nested system of folders. When the phone ended in Ms. Long's brother's hands, he completely ignored the photos, but treasured the music, as a tangible connection with what was fashionable in the capital. On the surface, this is similar to the marginalia of books that are passed down from generation to generation within a family, or to the wear and tear of objects that reminds people of previous owners—the material evidence of social bonds. But what makes phones different in this specific context is that this material evidence can be completely erased (as Ms. Long's brother did with another of his inherited phones, making it effectively brand new), or inaccessible because of the complexity of the interface (as the music and address book were for Ms. Long's mother), or subjected to a constant re-evaluation that pitched priorities of personal use against memories of previous owners (the limited memory space and the tension between wanting to keep her daughter's photos and snapping her own for Mrs. Long). It is this fluidity of life trajectories inscripted into the same object, which I was following in both its physical and its metaphorical embodiments, that allowed me to approach mobile phones and their stories from different angles. I could follow Ms. Long's phone physically, from Beijing to Village A; I could reconstruct patterns of use in the different places and by different owners; and I could use the content they stored in it to understand some aspects of their lives. Other phones I followed in the abstract, by retracing the paths they had taken and the relationships that they supported, but without ever seeing the physical objects, and therefore without accessing directly the content that their users created and shared. For objects like computers, the most important movement was not the physical one (after all, very few migrants had computers in Beijing, and they could not afford to give them to their families; and many rural families had started buying their own, sometimes before their migrant children). It was rather the ideas about how to use a computer and for what purposes it was appropriate that represented Marcus's "idea to follow."

From a more practical perspective, early in my research I had thought that having multiple fields in different provinces would allow me to observe whether there were practical differences in how the informatization of the countryside was proceeding, since the implementation of state-developed policies was left to provincial governments. But since the only trace of 'official' informatization in the villages were cellular and internet infrastructure, which were installed by telecommunication companies, what seemed to make a difference was the proximity to urban areas and transportation routes—as I described above; the village that was closer to a town was the one that had always had better infrastructure than the others.

But having different villages located in different areas, and with different characteristics, was useful to triangulate findings, to see more facets of what I was discovering, and to overcome the "fixed preconceptions" and specializations (Vaughan, 1992:173) that researchers develop when studying a topic in-depth and at length, and which might prevent them from developing theories and ideas that are more broadly applicable. Finding multiple fields for ethnographic research is a recommended strategy for students of China, as it reduces the researcher's dependence on the cooperation of local officials (Heimer, 2006). Since I never relied on official contacts to organize my research, to gain access, or to find field sites, dependence on local officials was never a problem, although I tried to have more fields accessible in case one of them turned out to be unviable.

Finally, I had the good fortune of doing my research for a rather extended period. This has been important not only in terms of findings, especially in the fast-moving field of ICT adoption and use, but also a real privilege. Being allowed into people's lives for extended periods of time, and observing the evolution and changes in these lives, helped me glimpse the larger physical and temporal contexts of my findings, and hopefully made me more skilled at differentiating momentary fads from deeper changes in social structures and habits. This is particularly important when taking the use of ICTs as an entry point to understanding people's lives. For example, various cultural explanations were offered to explain the fact that Chinese cell phone users seemed to text much more than those in other countries (Chen, Leung, Marcucci, & Yeh, 2009). And yet, when the price of calls went down, the proportion of calls to texts immediately rose, suggesting that a response to market incentives was as likely an explanation as the cultural one. Or again: in 2009, I discovered that my informants used one of the most popular Chinese social networking websites, Kaixing001, as much as the urban white collar population did, even though the latter were the sole focus of all the attention of marketers. By itself, this was a sign of increased urbanization, of more frequent use of computers and internet (which was almost non-existent when I had been there two years earlier), and of "emulating the lifestyle of those higher up on the pecking order." (Wang, 2005:1). Seen in a longer perspective, however, the use of social networking websites suggested that migrant women were creating, maintaining, and even strengthening social networks not only with former classmates who had stayed home or migrated to other places, but also with migrants who were not from their same province, and whom they had met in the city. This represented a significant change from previous generations, and might ultimately be one of the factors that will contribute to breaking down the sharp distinctions between urban and rural China, and between provinces.

5. Contested Meanings and Conflicting Categories

Above, I briefly described how differently I was treated by women and men in the villages. In this section I want to return to that point, and explore the role that I played as a foreign ethnographer in my field sites. Ferguson argues that what sets apart anthropologists (and I extend his definition to ethnographers) from other scientists is a certain "anthropological sensibility," which he summarizes as follows:

> "The real distinctiveness lies not in a method, but in an intellectual tradition, and in what we might call a sensibility (Malkki 2007)... Some elements of that sensibility are recognizably linked to the fieldwork tradition. Attention to embodied practices, a sensitivity to the gap between culturally approved statements and enacted

behaviors, an appreciation of the value of listening and discussing—these are all intellectual virtues that are hard to avoid when a reasonably sensitive person stays somewhere long enough. Other aspects of an anthropological sensibility, though, are less closely connected with 'being there'; they draw on other strands of our disciplinary traditions. My own short list of these would include such things as: 1) an attentiveness to categories, and the ways that all forms of knowledge and understanding are embedded in systems of categorization; 2) a focus on relations as constitutive of objects; 3) an appreciation of the social and cultural located-ness of both knowledge and knowers; 4) a valuation of research designs that are capable of subverting themselves and that deliberately attempt, as Marilyn Strathern has put it, 'to generate more data than the investigator is aware of at the time of collection"; and 5) a distinctive approach to comparison, in which the cultural forms and cosmological assumptions of the people doing the comparing are themselves in the picture and part of the analytical problem." (Ferguson, 2011:206)

As a student of information, I want to draw attention to the first item in Ferguson's list, i.e. the attentiveness to categories, and I want to argue that despite sustained, deep, and serious efforts at mastering the categorization systems of cultures far from the researcher's original one, there will always be areas that remain utterly foreign.

When I began my fieldwork in Beijing, I had an interview protocol that fit the more general project that Intel was carrying out in different countries. It included questions such as "describe your most/least pleasurable social experience," "think of all the people you interact with, who are they, who are the ones you consider most important," and a request to interviewees to keep a photo diary of their social activities. I translated the questions, and asked Chinese friends to check them, to make sure they were correct and were expressed in appropriate language. But my field diary from the first month in Beijing is a witness to the constant failure of these questions: they did not elicit much information nor insight, and they often puzzled my interviewees. The most spectacular failure was the photo diary, which completely confused each one of them, and was taken as a 'homework' and a burden. After a few more tries, and with the help of Ms. Wang and Ms. Song, who had somehow understood what I was trying to do, I developed a different set of questions that led me to the kind of answers I was looking for. The language of the questions had changed, and become more concrete and less abstract, but most importantly I had started to put questions in categories that made more sense to the lives of my interviewees. Instead of asking about 'sociability' in general, I started to ask them to list activities that were not directly related to work. This led me to discover the category of 'outings organized by the employer,' which were day-long trips to tourist attractions around Beijing, and which represented a highlight in the social lives of most of these women, even though they were highly regimented, organized by their bosses, and accompanied by them and all their work colleagues. Describing her local research assistant in Taiwan, Wolf writes:

"She had been working with us for nearly two years, and she had learned to formulate questions and report answers in a format that was comfortable to our Western minds." (Wolf, 1992:9)

I was trying to do the reverse, i.e. to formulate questions and parse answers in a format that was comfortable to my interviewees' minds and ways of thinking. But my getting slightly better at it mostly meant becoming aware of the gulf there was between us. Many of the answers I received were, to me, formulaic: for example, the "see the world" or "open my mind" (*kàn shìjiè* 看世界*, dǎkāi nǎozi* 打开脑子) that was given as an answer to the question of why they were in Beijing by all the migrant women there (Jacka, 2006; Wallis, 2012). Questions

that were too abstract typically got that kind of answer, or a quick dismissal that, if not fol-lowed up, would foreclose a potentially interesting line of questioning. For example, asking returned migrants in the villages whether there were skills they learned in the city which they brought back to the village typically brought a negative answer, because the question was taken literally. If they had been working in a clothes shop in Beijing and were not doing the same in the village, then they did not think of what they had learned in the city as something that had any relevance to what they were doing in the countryside.

The real problem with the questions as I had formulated them was that they reflected the categories through which I saw and organized the world, which were in turn influenced by my background, culture, education, etc. Categorization systems express the spirit of their times and of their place, as Bowker and Star showed in their classic study (Bowker & Star, 1999). They are deeply embedded in local environments, and are built on implicit assumptions that can be completely opaque to outsiders, and difficult to make explicit for insiders. When we try to fit out own categories to others', the results may be very strange indeed.

Asking rural people about development, about urban-rural differences, about uses of technol-ogy is likely to yield answers that we cannot always interpret correctly, sometimes simply be-cause we cannot decode correctly the proverb that was offered as an answer, a very common rhetorical device in Chinese. And this is not simply a matter of using the ordinary language of informants rather than the language that is taught in school, or written in books, as empha-sized in ethnographic training (Spradley, 1979). In fact, language can be both a barrier and an entry-point to a new categorization system. On the one hand, it gives the researcher access to a key for decode some principles of categorization. On the other, a less-than-perfect flu-ency provides a perfect chance to ask the same questions over and over, or to follow-up with clarifying questions that would not be appropriate if one were completely fluent.

"Ideally, the ethnographer who works in a foreign language can use these moments of uncer-tainty to delve deeper into the native meanings of particular words and phrases—a strategy that need not be hidden or cause embarrassment but rather one that can and should be con-ducted openly during the interview." (Winchatz, 2006:90).

In the village, my lack of knowledge of terms related to agriculture or village life proved to be a boon in terms of research, as I could explain or point to the many specific objects or situa-tions I was not familiar with, and take the opportunity not only to learn new words, but also to hear explanations about their contexts. I joined, for all purposes, the farmers' community as an apprentice (and I will discuss community and apprenticeship in Chapter Five), and learned by doing, by following people around in the fields, and by asking. As this practical apprentice-ship evolved into an "apprenticeship of my own research" (Lave, 2011), I realized through the questions that farmers and rural residents asked me that my answers had to go through sev-eral layers of simplification. The trickiest of these layers turned out to be the simplification of concepts, the shaving off of details, and the attempts at adapting my categorization system to my interlocutors' categories. The first question I was usually asked was: "Are you a city person or a countryside person" (*nǐ shì chéngshì rén huó nóngcūn rén* 你是城市人活农村人). In the Chinese context, this is an either/or question: I am a city person {therefore I am not a countryside person}, or I am not a city person {therefore I am a countryside person}. Where

people are born makes them an urban or a rural resident, and even if their hukou changes, a person still belongs to one or the other category. The question is in fact a shortcut to quickly evaluate one's interlocutor, but the categories that exist behind it do not have a ready equivalent outside of the Chinese context.

The way to mitigate the barriers of categorization systems, social status, and language thus lies in a constant triangulation of findings, and attentive observation, participant and otherwise. Concretely, this meant learning to ask questions that elicited a story or a narrative (e.g. asking the story of each mobile phone), trying to get to the reality behind stock answers such as "the internet is just for fun," and patiently recreating categories that make sense in the local context. Informants often used specific categories to classify activities they performed with a computer, but that they did not consider as 'computer use.' For example, talking with relatives on video chats belonged to the generic category of "chatting" (*liáotiān* 聊天), but chatting on instant messages was part of 'play' (*wán'er* 玩儿). It also meant turning what initially felt like annoying or puzzling questions about my own life into ways to understand local value systems around issues that I would not have thought of discussing so openly, such as financial matters. And finally, I learned to accept that having informal, unrecorded conversations followed by extensive write-ups sometimes yielded results that were not as precise as the transcript of a taped interview, especially when talking with people who spoke dialect or had accents that I could not understand well, which were in many ways more accurate and more truthful than formal interviews because they were the outcome of natural conversations, rather than the product of slightly artificial question and answer sessions, which often transformed loquacious women into slightly intimidated and timid interviewees.

6. Conclusion

A dissertation is like a map, that is, a representation of certain aspects of the world, that can be understood only by first understanding its legend. And this chapter represents the legend for the rest of this work, on which I establish the authority that I claim as interpreter of the interconnected phenomena of migration, ICT use, and rural life in contemporary China. This authority begins with a full disclosure of the practical details of field work, from how informants were met and recruited, to who they are, to the practical difficulties encountered in the course of the project. In other words, the authority begins with self-reflexivity, that is, with the ethnographer aware of (and questioning) the methods she employed in the field, where she was ethically involved with her informants, and attentive to issues of power. This chapter is meant to give readers a sense of the urban and rural life of the women who are the protagonists of my narrative, and to position myself in this context. I discuss gender, power, choice of field, and the difficulty of (attempting to) cross the chasm that separates very different categorization systems because these are the issues with which I struggled the most in the field and afterwards, and which I feel have most contributed to shaping my analysis and conclusions. Wolf astutely observes that there is a fine line between being critically self-reflexive, and being perceived as self-doubting, tentative, and self-absorbed, especially for female ethnographers (Wolf, 1992:135). At the same time, self-reflexivity and disclosure of the research logistics seem to me like the very foundation of one's analysis and what sets rigorous scholarship apart from a set of casual observations. It is on this belief that the findings I describe in the next chapters and their interconnectedness are based.

Endnotes

1. Following standard ethnographic practices, I changed the names of my informants and anonymized their villages of origin.

2. The question of how to define and count internal migrants has been (and is) widely debated, and there is widespread agreement that official statistics undercount them. (Chan, 2011; Liu & Chan, 2001). However, the trend that sees more and more women leaving rural villages is confirmed by different statistical sampling, as well as ethnographic observations. The latest census, carried out in 2010 and generally recognizes as more accurate than previous ones, puts the total number of migrants at 261 million, but a break-down by gender is not available yet (Ma, 2011).

3. In her study of Southern China factory women, Ching-Kwan Lee noticed that the workforce in a Shenzhen factory was organized strictly along 'localistic networks,' where people from the same village and often same family stuck together. These networks, always dominated by men (and hence, for Lee, "despotic" towards women because of the strict social control they exercised over women's lives), are crucial to bring workers to a factory, to provide identity papers and other documents necessary to work, to find out information about other jobs, etc, and are very similar to the localistic networks that characterized the Chinese (and other countries') international diaspora through the years (Lee, 1998).

4. In 2006 the government decreed that an urban *hukou* was no longer necessary to become a civil servant, making it even easier for these migrants to remain in the city (Chan, 2011:99).

5. The poorer and older migrants did, but many of my young informants were ashamed to arrive back in Beijing with a bag full of agricultural produce, which would identify immediately as a rural person. When I accompanied them to their villages, I was therefore the recipient of a lot of produce that their parents would have given them—much to my enjoyment.

6. The drawback of these gendered networks is that they often contribute to limit women to a narrow and very specific typology of jobs, as factory workers or in the service sector (Fan, 2004a, 2004b).

3 | A Gift from the City: How Mobile Phones Travel from Urban to Rural Areas

"About three or four years ago (2006-07),
that's when all the farmers started having mobile phones.
That's because the people who migrated all had mobiles, so when they came back to visit,
their old folks would say, "that's a nice thing, give it to me, then we can connect."
And so the migrant workers gave their old cell phones to their families."

Mr. Liu, Village B

"The boundaries of objects' circulatory patterns are the boundaries of social worlds."

(Corrigan, 1989:531)

1. Introduction

Long Bing, a gregarious 16-year-old boy with a ready smile and a passion for kong-fu movies, games, and technology, lives in Village A and goes to junior high school in a nearby village. He has no money of his own aside from the occasional CNY50 (USD7.5) that he gets from his two older sisters, and yet he owns four mobile phones.

> *"I use this a bit, that a bit, their functions are different, you see? For example, on this I can use QQ (an instant messaging program) but on this other I can't go online; then on this one I can read e-novels, and this I use to call."*

He also owns a video game console, a DVD player, and, for part of the year, his sister's Sony PSP (Play Station Portable). All these devices are gifts from family members: mobile number one is his father's old one; number two, his mother's (which she herself received as a gift from her daughter, when her daughter bought herself a new one); number three his middle sister's old one; and number four, the only new one, another gift from his middle sister, who works in a mobile phone factory. The other devices were all gifts from his eldest sister, who works in Beijing and is the family member with the highest income.

Not many people, in the countryside or elsewhere, own four mobile phones, but many rural residents own a mobile phone without ever having set foot in a mobile phone shop: someone, usually a family member, gave it to them as a gift. These gifting practices enlarge the pool of mobile phone users well beyond what the current income and education levels of the Chinese countryside would predict. A phone that is received as a gift is not chosen, and therefore might have functions that are inaccessible or irrelevant to the new owner. Conversely, it may lack desired functionality. A phone received as a gift, as the vast literature on gift practices shows, comes with obligations that are sometimes welcome and sometimes felt like a bur-

den. A phone received as a gift by someone who might not be able to afford one on her own can enhance the freedom of the receiver, or be perceived as a tool of control.

This chapter explores these themes as they play out between Beijing and the three villages—places of relatively low income, quite high mobile phone penetration, and a high rate of migration that creates a constant circulation of people, goods, and ideas from urban areas. Understanding the circulation patterns of mobile phones, and the values embodied in both the devices and the path they take is useful in understanding the personal legacies that are built into gifted phones, as well as the kind of social relations they represent, and the system of wealth redistribution they might support. For many rural residents, these gifts, rather than the informatization programs supported by the state, represent the starting point of their technology use: they are quite outside the commercial channels that bring commodities into the possession of urban residents, but well within the personal networks that traditionally facilitated the circulation of goods from urban to rural areas. This is important from a domestication theory perspective, because the way users start to think of themselves as users (e.g. see an ad, or another user with a media object, and begin to imagine how the same object would fit into their lives) is an important part of the way they go on to acquire and then incorporate ICT in their lives. However, domestication theory is firmly focused on a fully fledged consumer society, where people are exposed to goods, and begin to imagine them as part of their lives before they actually acquire them. In the Chinese countryside, the consumer society—at least in terms of ICT—is still in its early days, although progressing at a very fast pace. As we saw in the introduction, people are not as exposed to marketing messages, and are not immersed in a crowd of ICT users as their urban counterparts are. In fact, they are not even the targets of advertising of ICT goods, except for the ads connected to the informatization of the countryside program sponsored by the state, which exhorts them to use ICT to improve themselves (as I will explore more in detail in chapter six), rather than alluring them as consumers. In this chapter, I aim at enlarging the scope of domestication theory by offering an alternative view of the beginning of the ICT domestication process. Receiving an ICT device as a gift instead of purchasing it oneself comes with the legacy of the personal ties there are between giver and receiver, which can then be reflected in the 'relationship' that receivers subsequently have with their gifted phones. By suggesting an alternative to the commodification phase that starts the domestication process, and that Silverstone defined as:

> "(...) that component of the process of domestication, which in design, marketing, market research, the knowledge of pre-existing consumer behaviour and the formation of public policy, prepares the ground for the initial appropriation of a new technology. Machines and services do not come into the household naked. They are packaged, certainly, but they are also `packaged' by the erstwhile purchaser and user, with dreams and fantasies, hopes and anxieties: the imaginaries of modern consumer society." (Silverstone, 2006:233-234)

and focusing on the imaginaries of people who often did not or do not conceive of themselves as consumers of ICT, I want to draw attention to the personal ties that are often embedded in objects, and that can be very important in how they are used.

2. The Beginnings of Domestication: Imagining and Purchasing Mobile Phones

Earlier versions of domestication theory did not pay much attention to what happens before objects are purchased: the domestication process started once the object left the world of commodities to become the property of an owner or of a household (Silverstone, Hirsch, & Morley, 1992). Later works acknowledged more explicitly that technological innovation and design, followed by consumption and use are all essential components of the domestication process. On the one hand, there is the design and building process that aims at "creating the artefact... constructing the user... and catching the consumer" (Silverstone & Haddon, 1996:45). On the other, there are market forces, but also social environments (households, peers, neighborhoods), as well as users 'imagining' the object and how it will fit in one's life "prior to any loss of illusion that comes with ownership" (Ibid:63) that define technology choice and use. Even though domestication theory focuses on the social environments and on the owners of technology, there is still a lack of research on the process of 'imagining' oneself as the owner and user of ICT.

This process is fundamentally different in urban and rural areas. In the city, the distance between imagined and actual use is much shorter than in the countryside, because potential users are immersed in an environment that is filled with suggested (ads and tv) and concrete (actual users) scenarios of use, which contribute to creating a mental image of what kind of person uses what kind of phone. For many young migrant workers, both men and women, life in the city and a newly-found financial independence fosters a sense of autonomy, that is often expressed through consumption. Mobile phones are a particularly effective way to display their income and are the first 'big' purchase that many of them make with their own money (Wallis, 2012a). Ads, the types of shops that are close by, money, and a keen observation of which brands are used by peers, as well as people perceived as 'superiors' or 'inferiors' use all influence the decision to buy a certain phone. Ms. Long, the sister of Long Bing, could not afford a proper mobile phone when she first arrived in Beijing, and had to settle for a Little Smart[1], as she recounted the first time I interviewed her in 2007. However, she bought a proper cell phone as soon as she could afford to, even though it was a Chinese brand because foreign ones were still too expensive for her budget. In the following years, she changed phones more or less every year to year and a half, always upgrading to the best she could afford. She determined what was 'the best' according to several inputs. First of all, what kind of mobile were used by the peers she was trying to emulate and other people whom she considered socially superior (Korean students, since she worked at a university, and some teachers); in 2009, when I accompanied her to buy a new mobile phone, she explained that the phones that slid open were the most fashionable ones at the moment, and that she had seen several international students using them, whereas the ones with clamshell cases were quickly going out of fashion and were owned only by those who could not afford to upgrade. She owned a clamshell phone, was eager to change it, and ended up gifting it to her mother so she could buy herself the new, more fashionable one. Secondly, she took into consider-ation how she could make her purchase: the nearby mall was good to test the phones, but was too expensive; she regularly consulted with her colleagues on how to get the best deals, and they had recommended a website that allowed her to pay on delivery, which was what she used. And finally how much money she had. Ms. Ling had a similar system. She arrived in Beijing in April 2001; in December, she sent half of what she had earned to her parents, and

used the other half to buy her first mobile phone. She had really wanted a Nokia, but couldn't afford one, so instead bought a Motorola, as some of her colleagues who had been in Beijing for a longer time told her that it was an acceptable phone too. At that time not many people had a mobile, and she thought that those who did were very 'cool people' (*liǎobùqǐ de rén* 了不起的人). These experiences were quite typical among young, unmarried migrant women who did not have to send all of their money back home, and could invest significant amounts in buying the phone that best bridged the gap between what they imagined it could represent in their lives at that specific point in time (quality, social upgrade) and what they could afford. Brands were constantly discussed and compared, with input from television and real life. Ms. Song laughingly mentioned that:

> *"It's only foreigners now who own those old black and white phones, Chinese people care about quality!"*

Ms. Liu, a university graduate who had also grown up in the countryside, also thought about the difference between Chinese and foreign consumption habits, concluding that:

> *"Chinese people like Nokia! Especially a few years ago, everyone bought Nokia, because they're constantly coming up with new models. The quality is very good, everyone thinks that Nokia quality is excellent, and it meets the requirements of the Chinese people's consumption. For example, I don't really like thick, old-fashioned phones, I want what's trendy. Nokia followed everyone's needs as they change, but other brands like Siemens did not change, so have slowly disappeared."*

In the countryside, things are not always so straightforward. Rural residents, especially older ones, are at the margins of the external forces that shape so much of urban material imaginations, if not completely outside them. Very few older women, for example, say they ever thought about owning a mobile phone before someone gave it to them (with some exceptions we will see below). And, as seen in chapter

FIGURE 1: **Advertisement of Lenovo computers in Village C. This was the only ad in the entire village. The first line below the word Lenovo says "Information is becoming the golden key to prosperity"** (*xìnxī zhìfù jīn yàoshi*)**. The line below refers to Lenovo's computers and says "'Appliances to the countryside" specified product. Enjoy the 13% government subsidy'** *(jiādiàn xià xiāng zhǐdìng chǎnpǐn. Xiǎngshòu zhèngfǔ 13% bǔtiē)*. **'Appliances to the countryside'** (*jiādiàn xià xiāng*) **is the name of the government plan to provide discounts for rural residents on certain types of white and grey goods, which include computers.**

one, advertising, marketing, and more practical factors such as distribution channels are not as widespread in rural areas as they are in urban ones. In fact, the only advertisements that exist in the villages are similar, in content and style, to the old slogans painted on walls to exhort the population to improve itself in a variety of fields, and are happily ignored.

FIGURE 2: **Advertisement of China Mobile near Village A. The visible part of the ad reads, "Mobile internet is the new fashion".**

Younger rural residents are more attuned to the forces that shape the urban pattern of consumption of ICT. If they are in middle or high school, they often stay in bigger villages or towns that have more shops and advertisements; they use internet cafes; they keep in touch with older siblings, relatives, or classmates who have already migrated and who keep them up-to-date—using ICT—on life in the city, including its many opportunities to acquire ICT devices, or at least to dream of them in vivid details. But young rural residents often lack the money and the opportunity to turn their technological fantasies into reality, and the distance between what they imagine and what is possible is too wide to be filled. In the countryside, for young and old, the 'imagination' and purchasing phases are often subsumed into a new practice that is not accounted for in domestication theory: gifting.

3. Gift, Materiality, and Family Ties

There is a rich vein of work in anthropology that frames gifts of material objects as ways of organizing and maintaining social order. One of the earliest and pivotal works in this area was The Gift, written in the 1920s by Marcel Mauss, who talks about gifts and the economy of gift as counterparts to the market economy (Mauss, 1990). Mauss states that for gifts to work as substitutes for or to exist alongside a market economy, as well as the legal and social organizers of societies, there needs to be a highly organized and widely accepted system of rules around them, i.e. "the gift cycle," which starts with the duty to give, is followed by the duty to receive, and is concluded by the duty to reciprocate. Subsequent anthropologists have complicated and sometimes contested Mauss's view. Testart maintains that Mauss never actually

defines what a gift is and what it is not, and therefore conflates 'gift' and 'exchange' (Testart, 2007); Yan points out how the supposedly universal rules around gifting follow in fact localized rules in terms of who has the duty to give and who to receive, and whether reciprocation is required or, as in Indian contexts described by Parry, forbidden (Parry, 1986; Yan, 1996). Looking at gifting practices in rural China, Yan describes gift giving practices where the prestige connected to the gift is accumulated by recipients who are higher in the social hierarchy than the gift givers, and who do not return the gift. He also highlights an aspect of gifts that is usually neglected in favor of economic or religious analyses: the emotions that are expressed by giving and receiving a gift. He ventures as an explanation the fact that sentiment might not be considered as important as other issues that highlight the uniqueness of various local systems of gift exchanges, 'sentiment' being too commonplace. And indeed, this seems confirmed by the little research there is on gift giving within families, an environment where sentiment is particularly relevant. Corrigan explores clothes gift among family members, and finds that resource distribution through gifts within households follows gendered lines, but the circulation of such gifts is quite complex, both following and challenging power structures (Corrigan, 1989). In his study of Christmas gifts given and received in Winnipeg, Cheal confirms that the economic value of gifts seems less important than their symbolic value (Cheal, 1986), and in a subsequent work confirms that "How people act in their gift transactions is a result of how they think about relations between the sexes and between the generations" (Cheal, 1988).

In recent years, the digital world has been an interesting field to explore practices of gift giving and receiving, with research that finds SMS exchanges among youth as consistent with the gifting cycle proposed by Mauss, where sending and reciprocating text messages are essential activities for maintaining one's role in a social network (Johnsen, 2003; Taylor & Harper, 2003). Writing about the gift of mobile phones, Burrell highlights how different ways of obtaining ownership or use of them entails different rights and different obligations for both givers and receivers (Burrell, 2010). Bell mentions in passing the fact that many people, particularly older people, in Asia seem to receive their phones as gifts, and hints that "this circulation of technology echoes older social, kin, political and geographic relationships," but does not elaborate on them (Bell, 2005).

By exploring the gifting of mobile phones, I map the "boundaries of social worlds" (Corrigan, 1989:531) that these gifts mark, and the practices, both old and new, that exist around these gifts in both the physical and the digital world. This type of gifting happens mostly within families, therefore in a context where rules on reciprocity and duties are different than those that regulate gifting outside the family, and follows specific directions that reflect the changing financial situation and power relations of the different members of the family.

4. A Traveling Mobile Phone: Who Makes a Gift, Who Receives It

The Long family and its many mobile phones live in Village A, although only the mother, Mrs. Long, and the youngest son are there full-time. The father, in his late 40s, is a construction worker who used to have a full-time job in Beijing, but is now taking occasional, shorter-term jobs closer to home. The elder daughter, Ms. Long had moved to Beijing in 2004, and was working as a receptionist in a university there. At the time, she owned a Tianyu K-Touch

candybar-style phone, a Chinese mid-market brand, with a camera and a radio function. In summer 2009, she wanted to upgrade to a better phone, because a lot of her friends had foreign-brand phones that she felt had more cachet than hers. She decided to buy a Samsung phone that cost about CNY1,200 (USD185), and to justify the expense she first said that her old phone did not work all that well, and needed to be changed before it broke. But since the phone did not break, she decided that her mother's phone was getting old and she could have used a newer one. She bought herself the Samsung, and on her next trip home gave her mother her old Tianyu.

On her visits home, Ms. Long usually brings gifts in the form of money, food, clothes, and ICT. There are rules, or perhaps rituals, around each type of gift. The money is separate from the money Ms. Long is supposed to send back to help with the family finances as agreed with her parents when she first left. It is 'extra' money, set aside for a specific reason—a common practice within families not only in rural China, done to differentiate money for current expenses and money that is either 'personal' rather than communal, or earmarked for extra-ordinary expenses (Zelizer, 2005)—and is given to each family member separately, sometimes with specific instructions or wishes attached to it. For example, at Spring Festival she gave her brother CNY200 (USD30) to buy airtime for his phone and to use internet cafes; she gave her mother money on several separate occasions, from small sums of around CNY100 (USD15) to buy something specific, to more significant sums when they were discussing some house repairs that the mother wanted to make. Foodstuffs like oil, honey, and fruit, are brought back only at Spring Festival. Food is a traditional Spring Festival gift, and many migrants respect the tradition even when it is quite absurd, as for example Ms. Long bringing peanuts and peanut oil to her family, which grows peanuts and makes oil from them. The clothes Ms. Long brings back are a mixture of new items bought in Beijing specifically for her brother or her mother (which should not be given to other people) and her own old clothes, which she gives to her mother with specific instructions regarding which ones she should keep for herself, and which ones she can give to other people as gifts. Her mother often uses these clothes as small gifts to give to her clients – she sells insurance part-
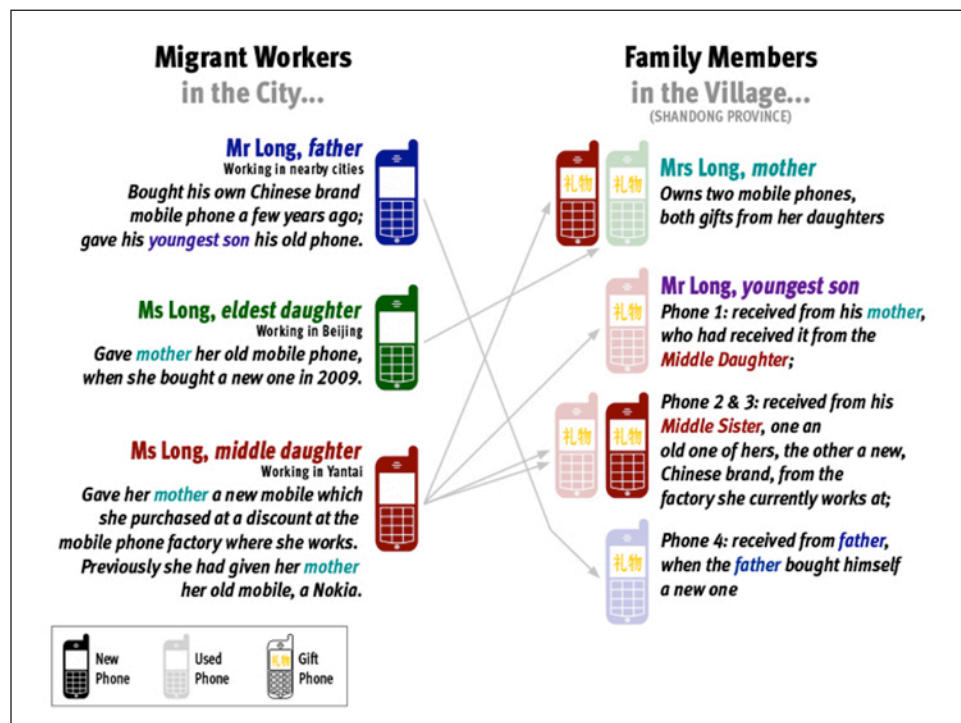
FIGURE 3: **Mobile phones circulation in the Long family.**

time – when they make significant purchases. Ms. Long is also the major purveyor of new and used ICT in her household. To her mother, she gave her Tianyu phone, as well as her old digital camera; to her brother, her old MP3 player, and, although reluctantly, shared ownership of her PSP, which she keeps in Beijing for part of the year and then leaves to him in the summer. She also bought the family's first television and DVD player one Spring Festival, as well as a video game console for her brother, much against her parents' wishes.

Ms. Long's middle sister is 19 years-old and works in a mobile phone factory in Yantai, a medium-size city on the coast, about 6 hours away from the village. The factory makes phones for a variety of Chinese brands, as well as copies of foreign brands. She bought her mother a new phone out of sibling rivalry: the phone she bought was new, whereas her older sister gave her mother a used one. The new phone had a touch screen, something that she thought nobody else in the village had. Her mother was extremely pleased by this gift, which she felt would give her a lot of 'face,' that is, prestige, in the village and among her clients. As we will see below, she was never able to use it, and the phone ended up back in its box, in a drawer of her bedroom, waiting to re-enter the gifting cycle.

Many families have similar, if not quite so complicated, stories of mobile phones as gifts. Typically, givers are migrant workers who have more disposable income, and more access to a wider variety of ICT, and recipients are people without much economic independence: older people, young people who are still in school, and women who don't have a job outside farming. Mr. Liu and Ms. Deng are both examples of people without much, if any, disposable income, who depend on other people for luxury purchases such as mobile phones. Mr. Liu is a farmer in his mid-50s, who lives in Village B and has three daughters, all married and living in urban areas. The daughter who lives in Beijing gave him a new mobile phone, and the daughter who lives in Dezhou gave his wife her old one.

A gifted phone is often a used phone, but sometimes it is a new one, usually chosen by the person buying it rather than the person using it. Ms. Deng, an 18 years-old from Village A about to go to university, owns a basic Nokia mobile phone. Before owning her own, she thought mobiles were a "very precious thing," and when people put theirs on the table, she didn't even dare to touch them for fear of causing damage. Her parents, both farmers, do not own a phone, and do not have much money to spare. A friend of the family, whose father does business in Guangdong and is well-off, wanted to give Ms. Deng a present, so when she was 16 they went together to a mobile phone shop in the county seat, where they chose together the Nokia, as she felt it was "good quality," and within her gift-giver's budget. She was hoping to buy a new phone when she moved to Jinan, Shandong's capital, to attend university, but was not sure that her parents were going to have the money for that, since the university fees and living expenses were quite high already for their limited means. Moreover, she says:

> "especially at university, phones are all about status and face, so one needs to buy a good one, otherwise people will look down on you, just as they will if you're not wearing the right clothes, don't have the right computer..."

Sometimes, however, the dependence on other people is not financial, but is rather due to lack of education, and ignorance/distrust of technology. In other words, some people have

the money to buy a mobile phone, and might even be interested in owning one, but do not know how to choose it, and even less how to use it. In these cases, having an intermediary who provides 'guided access' is an essential step to fruitful ownership. Mrs. Gao, a soft-spoken nurse in her mid-50s, used to live in a village near Dezhou that has since become part of the city. She traces the origins of her two mobile phones and her desktop computer to the desire to stay in touch with her only daughter when the latter moved to another city to attend university, and to the very practical fact that her daughter gave her both mobile phones, and taught her how to use them as well as the computer. As we are seeing over and over again, she received her daughter's old mobile when the daughter upgraded to a new one, and the daughter taught her the basics of operating the phone—how to make and how to receive a call, how to read a text message. The fact that she could ask her daughter for guidance if she forgot certain functions or could not do certain operations gave her confidence to try out new functions such as text messaging or inputting names in the phone book, and made her less afraid of technology. When the daughter went abroad in 2007, the mother recruited her neighbor's son to help buy and set up a computer with a camera to be able to video chat with her.

Mrs. Xing lives in Village C, and was introduced by her neighbors as 'the rich woman of the village,' because her husband had been working in Singapore as a scaffolding builder for many years. She owns a mobile phone and a laptop, and they are both gifts from her husband—she says that he knows what she can use and what she needs, so he will give her a new one when something that is suitable for her comes out.

As these stories begin to show, there is a consistent pattern in the gifting of mobile phones in the three villages. A used mobile phone is gifted within the extended household, not outside it (unlike in urban areas, where I heard frequently of people giving their old phone to friends who had lost theirs, or could not afford one, so that they could buy themselves a new one); it is of a lower value than the one owned by the gift-giver; it is typically not given for a specific formal occasion, such as Spring Festival, but it is rather an ad hoc gift that emphasizes informality and familiarity in the relationship between the gift giver and the receiver; it is given to a specific person, rather than to the family as a whole, but can be re-gifted to another family member. This gifting and re-gifting changes the ownership of the mobile, which is always very specific: I did not come across any instance of shared ownership, and very little shared use. The direction in which gifts flow is determined by the economic position of the person who gives the gift in relation to the person who receives it, followed by their respective positions in the hierarchy of the household. In other words:

1. Urban dwellers (typically, migrant workers who have left the village but retain strong ties to it) give mobile phones to rural residents, never vice versa.

2. Male rural residents sometimes give mobiles to their female kin, typically their wives, daughters, or sometimes mothers.[2] Ms. Hua, the young, bubbly, and entrepreneurial owner of a mobile phone shop in Village B, says that the peak selling seasons are Spring Festival and after harvest, when people have some disposable income, and men will come to buy a new mobile phone for themselves. On these occasions, they will give their old ones to their wives. Even when the family finances are held in common, as is typical when most income comes

from farming, husbands have more freedom to make a significant purchase like a mobile phone on their own. Mrs. Yang, in Village C, had long wanted a mobile phone of her own, and even though she was in charge of the entire farming cycle including selling the crops, she would not spend the money for a phone without her husband's approval. Since he thought that she did not need one, she had to use the landline. Other women talked about using their husband's phones, but as a hardship to rectify as soon as possible:

> *"Now I have my own mobile. Earlier, I was sharing with my husband, but then when I started working again in (a nearby village) I thought I should have my own, it was more convenient for work. I bought it myself, with my own money, three years ago. It was a basic phone. But now I use my husband's. We swapped because mine was better than his, so he took it."* (Mrs. Xue, Village C)

3. Working age adults give mobile phones first to their parents, then to younger siblings, as in the Long family.

4. Working-age women give to older women and/or to younger siblings.

Because of the nature of ethnographic work, I am not claiming that these patterns of use are the generalized rule for mobile phone ownership and circulation in rural China.[3] In the context of the Chinese countryside, Shandong and Hebei are relatively rich provinces, where the countryside is well connected to job- and opportunity-rich urban areas, and agriculture is profitable. In provinces that are more remote, less connected, less well-endowed in terms of land and industrial prospects, the situation might be very different, the ownership of mobile phones, through purchase or gifting, much lower, and the sharing of devices much higher. However, these patterns are a useful starting point for understanding how different circumstances influence ownership, use, and access to mobile phones.

5. Mobile Phones and Social Relationships

What is the meaning of these gifts? Is there a "duty to give? Is there a "duty to reciprocate"? Can they be refused? This section aims at teasing apart the complex issue of what kind of relationships already exist or are created and how they might be modified by the gifting of mobile phones.

5.1 There's No Free Gift

Most of the literature related to gifting practices emphasizes the "duty to give" and the "duty to reciprocate," first theorized by Mauss as the essential parts, along with the duty to accept a gift, of the gift cycle. Gifting practices within and among communities are interpreted as organized rituals that involve the functioning of social systems as whole entities. The much smaller body of literature that focuses specifically on gift giving within families emphasize the symbolic and sentimental value of the gift, and the role it plays within the complex web of rituals, obligations, and tie-building of family life (Cheal, 1986, 1988; Corrigan, 1989). In this context, gift giving is something that contributes to family relations, and therefore does not require the same "duty to return" that gifts within a wider community require. Rather, it is a part of a relationship-building endeavor that lasts a lifetime and that is returned in different ways—with another gift, but also by a simple acknowledgment of the gift-giving gesture, or with the acceptance of the power relations that is created or underlined by the gift giving.

The equivalent of the "duty to return" in a family context is incurred as a moral obligation towards the gift giver, which is fulfilled by accepting one's role in the gift-giving ritual (e.g. always have one's phone along, even if it is inconvenient) or by acknowledging the role of the giver in the receiver's life (e.g. a brother acknowledging that his sister cares about him, and the returning of the sentiment by doing her small favors when she visits).

Neither givers nor receivers perceived mobile phone gifting as something that is accompanied by an obligation to return the gift in kind. In fact, it was well understood that the gift is given to people without much income, or anyway with less disposable income than the giver, so it is more part of a duty to care for weaker people within the family, or of what Burrell, in her description of the preference given to people in poor health in the sharing of mobile phones in rural Uganda, explains as a way to "promot(e) social cohesion within families and communities" (Burrell, 2010:246). The gift of a mobile was often described as a way to be sure that older parents can be reached:

> "The first mobile I had was a Nokia, the basic one, which then I gave to my father-in-law. (Q: what does he use it for?) He doesn't really use it, it's more for us to find him." (Mrs. Li, Village C)

This can be framed as a way to keep in touch with one's parents, and particularly one's mother, when far away, as explained by the young migrant women who had given their phones to their families, as well as a way to allow oneself to upgrade to a newer model without feeling guilty for wasting a working phone, as we have seen earlier with Ms. Long. Older parents, far from being a passive recipient of the gift, sometimes solicit it, explicitly pointing out that they are getting older and might need to be in contact:

> "About three or four years ago (2006-07), that's when all the farmers started having mobile phones. That's because the people who migrated all had mobiles, so when they came back to visit, their old folks would say, "that's a nice thing, give it to me, then we can connect"—and so the migrant workers gave their old cell phones to their families." (Mr. Liu, Village B)

This kind of 'expedient gift' is very common, and happens not only among family members, but also among friends, both in the countryside and in the city. Friends and classmates who come from better-off families, or who have jobs and disposable income, or who are simply eager to upgrade their own phone to a newer model, might give their old, working mobile to their friends, if the latter don't have a phone, or have lost it. These are not important gifts, from a monetary viewpoint, and receivers usually do not feel the obligation to repay the kindness directly. The fact that there is no duty to reciprocate the gift, however, does not mean that there are no obligations attached to it. In a very practical way, there are obligations both for givers and for receivers, and they tend to follow specific patterns. In the case of the givers, it is understood that if the receiver has very little or no disposable income, as is typical for older parents living and farming in rural areas, the children also assume the duty to teach the basic skills for making and receiving calls, to buy airtime and make sure that the phone always has credit, and to initiate calls. The receivers' 'duty' is to keep the phone in working condition (e.g. functioning and charged) so that they can use it to make emergency calls or can receive calls from their children, to learn how to use the phone from their children, and to have it always with them.

"My daughter taught me how to use (the mobile phone). I do not send SMS, the characters are too small and I can't see well. But I receive SMS and make and receive calls, and she showed me how to do that. The phone is a link with people who are away. For example I take it to the fields when I go to work. If they call at home and I'm in the field, then they can't reach me. But I take the phone with me, so they can reach me." (Mr. Liu, Village B)

School-age children are not expected to return a gift in any manner, since they are income-less, and in fact often depend on the mobile phone giver for money for airtime. They also tend to already know how to use the phone, sometimes better than the people who gave it to them, and are therefore outside the system of expectations and indirect reciprocity around training, airtime purchase, making and receiving calls, etc., that we described above. But, as Corrigan aptly notes, "even if it is true that the person giving has no expectation of return, this does not rule out the power dimension: dominance is all the greater when no return can come." (Corrigan, 1989:530). For young adults receiving phones as well as money from older siblings or parents, these gifts are part of the many rewards/ punishments their life, and in particular their school life, is made of. Long Bing always receives phone/internet money from his elder sister accompanied by a stern reminder that he needs to do better in school. Mrs. Li confiscated her son's mobile phone during the school year, because the teachers said that he needed to concentrate on his university admission exam. His complaints that he might need to contact the parents for emergencies (he lived in the dorm during the school term) were quickly dismissed by both his mother and his teachers, and he was promised his phone back only if he did well in his exams.

5.2 Mobiles and Freedom

I discussed above how, for rural women who do not have their own income, it can be difficult to buy a phone autonomously, and ownership typically comes through a gift. As with the "duty to reciprocate," the "duty to receive" is also far from being universal, and is subject to constant negotiations with the gift givers. For example, Mrs. Ouyang is a 55 year-old farmer in Village A, married with three adult children. When asked whether she had a mobile phone, she said no, that she did not own a phone and could not use one, but then went on to elaborate:

"My children gave me a phone. They had one that they didn't use, so they gave it to me, but I don't use it, it's too much of a hassle." (Q: So you do have a mobile phone?) *"Yes, but I can't do much with it. I can receive calls. I also help my husband using his mobile phone, because his hearing is bad, so when someone calls him, he presses the key to answer, but then gives the phone to me and I talk. But I don't like talking on the mobile phone a lot, the reception is not clear; it's difficult to hear with clarity. But my husband can't hear at all, so I help him. Our friends say that we're "a deaf and a blind living together" because my eyesight is not good. But what are mobile phones for anyway? I think they're a hassle, like when I play cards with my friends, then the phone rings, and that's annoying, it interrupts what we are doing."* (Q: So why do you have a mobile phone, if it's so annoying?) *"My husband needs it for business (he drives a tractor and rents it out occasionally); if you don't have a mobile, how do people find you? There's the landline, but then you're not at home and you might miss the call. But I don't like it. My son wanted to give me a cell phone, so that he can find me easily when I'm not at home and I'm out playing cards, but I don't want it! I'm afraid he'll find me too easily, and I don't want that."* (Q: which one of your children gave you the old mobile?) *"Actually, I have a lot of old phones at home that our children gave us, they didn't use them anymore so they gave them to us. But I don't want to use any of them."* (Mrs. Ouyang, Village C)

Mrs. Ouyang did not refuse the phones her children give her, and even remarked on how they were trying to find a model that she would be able to use, and to teach her how to use the different functions – but she kept on refusing to carry around her own phone, and used one only to help her husband. The real value of these gifts lies in the reaffirming of the bond between her and the grown children, rather than in the objects themselves. She mentioned several times in the course of the interview that her son was extremely patient in teaching her all that is related to technology, and that her daughter who lived in Beijing always helped her in the fields when she came back home, in addition to bringing gifts. The gifts are simply an articulation of family ties. And because they were a reminder of her children, she felt that she could not avoid answering the phone when it rang – after all, the children were usually not around, so they had no way of knowing if she was at home, in the fields, or playing cards. But she preferred to not carry the device with her, and avoid the guilt she felt if she did not answer.

Some women, however, embrace these gifts as tools that allow them to carve out some independence from an occasionally constraining family (and village) life. Women, aside from little girls and old women, are often held accountable by their husbands and in-laws for where they spend time and with whom. Men often come and go as they please; women, on the other hand, partly because of exogamous marriage patterns that mean that they are in a subordinate position as 'guests' in their husband's villages, are often limited to staying in the village, where people know them and keep track of their every move (Gaetano & Jacka, 2004; Jacka, 1997). Mrs. Yang, in Village C, had desired a mobile phone for a long time, but her husband did not think she needed one because all she did was farming, so there was no 'business' reason for her to own one (although, as we will see in chapter five, farmers do not use mobile phones for purposes related to their farming very much). When she finally got a phone (in fact, my old mobile) she was enthusiastic about the freedom it allowed her:

> *"I can do whatever I want to do! If I want to go somewhere to play cards or play mahjong, I just do it, they (her husband and live-in mother-in-law) can call me or I can call them if there's anything, they don't need to come looking for me. Definitely more freedom!"*.

In addition to meeting her friends to play cards, Mrs. Yang also wanted to be able to go and visit her own mother in another village whenever she wanted, which was something her mother-in-law disapproved of. Having a mobile phone allowed her to go for these visits without telling anyone, and still come back quickly if need be.

Mrs. Long also uses her mobile as a way to increase her independence, in this case economic. A few years ago, she started selling insurance as a side-activity in addition to farming. At the time she had a landline, and used it to contact and follow-up with clients, all living in villages nearby. Although it was better than visiting them and finding that nobody was home, it was not very efficient. The mobile phone allows her to call them and be reachable herself at all times, and has helped her expand her business. When visiting nearby villages to go to the market or run other errands, Mrs. Long would often call clients living nearby, as I observed on several occasions, and if they were available she would stop and visit them. For school-age children too, owning their own phone can mean carving out some private space which their living conditions lack (school dorms house eight to twelve people or sometimes more per room, and private homes often do not have separate bedrooms.) Ms. Deng remembers the great feeling of having her very own mobile and being able to keep in touch, privately, with

her classmates when she came home from school at weekends, "although it can be embarrassing when one gets messages or calls very late at night and the parents wonder what it is…"

Ownership of a mobile phone by people who traditionally are in a subordinate position can be a way to quietly subvert power relationships. Writing about negotiations around telephone ownership and use among the Amish, Diane Zimmerman Umble remarks that

> "Rules about the telephone marked the edges of appropriate association – who could be connected to whom, in what context and under what circumstances. Rules about telephone ownership highlight the struggle over who had authority over what realms of knowledge or information. The telephone debates tested the authority of the bishops to regulate social practices. The debate also tested the principle of Gelassenheit, as 'unwillingness to submit' was perceived to be part of the problem. Telephone use also highlighted the borders of language communities. (…) It removed communication from the context of community and made possible private and individual links with sources of information from outside – unmediated by the style, rhythms and rituals of community life." (Umble, 1992:189-190).

The telephone then, the mobile phone now, challenge authority. In the context of the villages, it is a challenge to those who traditionally had the right to decide for the family, rather than for the community, i.e. the patriarch. The response is negotiated on a case-by-case and on-going basis, and is complicated by the fact that people who were traditionally in a subordinate position now can have the economic upper-hand. Many older women in the three villages received their first mobile phone from their migrant daughters, who were exploring and testing the limits of the power they could extract from their newly found position of prestige within the family hierarchy because of the remittances they sent home. Ms. Long gave gifts of money and other goods, including ICT devices, as a direct challenge to both her mother's and her father's authority, such as when she gave her brother a video-game console against her parents' wishes. Mrs. Yang did get a mobile phone from myself, and later on a second one from her son, despite her husband's conviction that she did not need one. Through her phone, she succeeded in re-asserting some control over her time and personal relationships, just like young migrant women in the city use their phones to carve out some personal space from service-sector jobs that often do not have firm hours of operation. However, it is a double-edged sword, especially in the city. Ms. Ling, a masseuse from Shaanxi who had been working in Beijing since the early 2000s, told of how her first mobile phone allowed her unprecedented freedom, because she could leave the massage parlor to go shopping nearby when there were no guests, and be called back by her colleagues when she was needed. She also started to store clients' contacts, so that she could book appointments directly rather than through the massage shop, and earn more money. However, the negotiation of power is an on-going struggle: for every gain in freedom by someone in a subordinate position, there is a push-back by traditional power-holders. For Ms. Ling, the initial freedom she obtained became soon one more way for the boss to find her on her days off and call her back to work if he needed her. Ms. Song, a nail shop receptionist, had similar experiences, but she perceived them in a slightly different way. She would occasionally be called by her boss on her free day to report back to work, but because she worked for a person she considered to be a "good and fair boss," she did not mind helping out. When out shopping on her day off, she would occasionally find items that she thought would be useful for the shop, and she would call her boss to consult on whether to buy them or not. The relationship between her and her boss

was, unusually among my urban interviewees, characterized by trust and a mutual respect, and mobile phones were used by both parties in a way that was consistent with these feelings. In rural areas, a mobile phone for the head of the family might mean not only that the woman does not get her own, but also that she loses access to the landline, if the husband decides that the family doesn't need it anymore because he has a mobile (Wallis, 2012b).

5.3 A Married Out Daughter Is No Longer Like Spilt Water[4]

As Cheal argues, "gift transactions confirm ties between individuals, and are thus a means of maintaining valued relationships" (Cheal, 1986:425), but they also punctuate changes in such ties. Gifts like clothes and mobiles can reaffirm a disinterested and non-utilitarian value in a relationship, but also be a relatively cheap way for the gift giver to increase their social status both within their family and in the village. In particular, for young women it can be a way to compensate for their absence and, sometimes, for their ignoring the duties connected with being good daughters, for example dating men they meet in the city—ironically, in relationships that are often supported by mobile phones (Wallis, 2011)—rather than settling for arranged marriages in the village. Mobiles are particularly important in keeping the mother-to-daughter bond alive, a significant change from Chinese traditions of women cutting ties with their family of origin after marriage (Zhang, 2009).

Changes in the economy and in society in the past twenty years have transformed this situation, and new ICT, in particular mobile phones, have allowed what Bray calls the "network of intimacy" between mothers and daughters to be reaffirmed independently of the ties with the rest of the family (Bray, 2008). This is something that several interviewees— both mothers and daughters—remarked upon. Although the conversations are often very short and utilitarian (as Mrs. Cai summarizes them, "Did you eat? What did you eat?"), they can happen whenever one of them wants to talk, and they require very little effort—a big

FIGURE 4: **Mothers and grandmothers in Village C.**

change from previous times, when people in the city had to queue once a week to use public phones, or had to write letters. Clearly these processes exist within a larger changing societal matrix of obligations, customs, traditions and relationships that go well beyond what is represented by conversations enabled by mobile phones, but ICT in general represent a new area where different generations can connect. As we will see more in detail in the next chapter, children, and particularly daughters, are the ones 'en-skilling' their mothers in the use of mobile phones and computers, in a reversal of roles from the old days, when women 'en-skilled' their daughters in the use of domestic technologies such as the kang, a type of brick bed heated from underneath that is typical of Northern China. It takes considerable skills to keep the heat under the kang at the correct temperature, and traditionally this has been

a woman's job. The demise of the 'old technology' represented by the kang in favor of the 'modern' stove has meant the deskilling of older women, and the loss of an important space to create intimacy among women, through 'feminine skills' that were passed down from one generation to another (Flitsch, 2008). Now these spaces of intimacy are reclaimed in a different context, where young women patiently (or sometimes not) teach their mothers how to use mobile phones, subscribing them to the news or the weather report via text message, or showing them how to use a camera phone, or finding content like music or e-books to download on their mother's phones and showing them how to access it. Fathers are often excluded from both the 'en-skilling' and the 'network of intimacy' that mobile phones afford between mothers and their migrant children. Ms. Ling says that she always calls her mother, and at the end of the call she would ask her if her father had anything to tell her. "Is there anything?" (*yǒushì'er?* "有事儿?") the mother would ask the father. "Nothing" would be the typical answer (*méishì'er* "没事儿"), and that represented the end of the conversation, all carried out with the intermediation of the mother. Ms. Ling added that these conversations just reflected a common pattern of communication within her family since she was little: she, her brother, and her sister mostly talked to her mother; she would relay important facts and questions to the father, who would answer, but who would otherwise be left out from the domestic banter. Ms. Ling's case is not isolated, and her typical phone conversation with her father—"Is there anything?" "Nothing"—was repeated verbatim by several interviewees. It is rather a reflection of the traditional, patriarchal organization of the family that still persists in rural areas (or at least did when these interviewees were growing up, in the 80s and 90s), and that is being carried over to new technologies.

6. New Users, Different Functions

These 'traveling' gifted phones end up in a very different physical environment from the one where they started their lives, and are owned by users often with different skill set, interests, and needs. There are challenges linked to the environment, both physical and socio-economic, of the countryside. For example, a mobile phone in an urban environment is used mostly indoors, has its own charger, and has its back taken off only when the SIM card needs to be changed—a relatively infrequent event, as changing a SIM card means changing one's number, which is often considered not worthwhile even if there are better contracts on offer. In rural areas, all these conditions are reversed. Phones are used, and often charged, mostly outdoors, and in any case the distinction between indoor and outdoor is not as clear-cut as in urban areas, with courtyards being an extension of the indoor living spaces. All three villages have unpaved roads, and the rainy season is short, so the environment can be extremely dusty. This represents a major challenge for mobiles and computers, as well as for televisions and other technologies, which is made worse by the fact that mobiles are often kept open, i.e. without their backs. Ms. Hua, the mobile phone shop owner, explained how many of her clients change their SIM card (and associated phone number) very often, to take advantage of special offers from the two main mobile phone operators, China Telecom and China Unicom. Nearly everyone uses pay-as-you-go SIMs without long-term commitments or even signed contracts, so many people buy a SIM card, which typically comes with some airtime, use up the airtime, and then change it to get a better offer. For example, Ms. Deng, the 18-year old we encountered above, changed her number four times in the course of a month in summer 2011. Her budget was truly limited, so she was always looking for special SIM card introduc-

tory offers (which would typically give a certain amount of free airtime to entice buyers), or simply swap cards to make different types of calls (long-distance versus local.) Indoor to outdoor use also means different ways of fulfilling the same need. For example, in urban environments, music listening tends to be a private activity, done with earbuds. In the villages, on the other hand, listening to the radio or to music is a social activity, and phones are often brought to the fields so that the radio can keep people company. Newer, urban phones often don't have speakers loud enough, nor a radio function, since people download MP3s and choose their own music. When phones like these arrive to the countryside, it is often a disappointment for the recipient as the supposed upgrade turns out to significantly less useful than the phone it is replacing.

A second set of challenges comes from the different educational/skill level and from the different interests between gift givers and gift receivers. When phones are given to parents or other older relatives, the skill levels of the new users can be considerably lower than those of the original users. This problem is becoming worse as new models, including smart phones, reach the countryside. In fact, new, more sophisticated phones do not necessarily imply new, more sophisticated uses:

> *"I got my second phone in 2008, a bright pink Motorola with a camera,, that my son gave me. It had more functions (than my previous one), but I still used it like before, because I can't use all those functions. I brought it with me in the fields, and it fell, and it was completely smashed. So then my younger daughter bought me another Nokia like the one (I had) before. I always bring it with me when I go to the fields to work."* (Mrs. Cai, Village C)

A similar thing happened to Mrs. Long: one summer evening in Village A, Mrs. Long showed me the brand new mobile she had received from her middle daughter, the 19-year-old who works in a phone factory. It was a 'shanzhai' (i.e. pirated) copy of a Motorola smart phone, still in the box, and she carefully took it out and turned it on. The opening screen showed a small lock, a familiar sight for any smart phone owner, but completely opaque to Mrs. Long. She read carefully the instructions on the screen, "Slide your finger to unlock the screen," and after a few failed attempts due to her unfamiliarity with touch screens, poor instructions in Chinese, and a rather unintuitive interface, the two of us finally managed to unlock it. Mrs. Long wanted to see where the radio was, and after pressing on the screen somewhat at random she located some music; once she had it turned on, however, she could not find a way to turn it off, nor to lower the volume. When the screen went to sleep and she found that she could not unlock it again, she turned the phone off, put it back in the box, put the box away, and reverted to using her old phone. Many older interviewees say that they use their mobiles as they use their landlines, that is they make and receive calls. Many people, again among older users, were aware of functions like text messages, and knew that people could sign up to receive daily news or the weather report, particularly appreciated by farmers, as we will see in chapter six. But not everybody interviewed could locate the text messages folder on their mobile. Even if they could read, many users did not have the skills required to input Chinese characters on mobile phones and computers, meaning that even those who can locate and read text messages often cannot reply to them.

The step of domestication that begins with 'imagining' what a phone will do and how it will fit in one's life can be very different in rural and urban areas, especially for older users. An 'unimagined' phone like the fake Motorola smart phone finds an equally 'unimagined' user like Mrs. Long, and sometimes the combination works, and unlikely users do learn how to use their unexpected phones, even if only in a partial way, or in a way that depends on others for more complicated functions. And despite the often minimal uptake of advanced phone features, there is an increasing awareness of the connectivity the phone offers. A mobile phone opens up the possibility of communication channels between people in urban areas and those in the countryside, across locations and across generations. The possibility is not always and not equally exploited, but when it is, it provides a way for people who have never migrated, or do not have much education, money, or social capital, to reach through their urbanized children some of the benefits of 'weak ties'—those relationships that Granovetter correlates positively with more opportunities (Granovetter, 1983). As I will describe in more detail in chapter five, Mr. Liu insists that the internet is for young people, or people who want to grow their business and find new opportunities, not for an old farmer like himself, who does not have many needs, and is not interested in making more money. However, when he needs to make important purchases, such as his last refrigerator, he calls his daughter in Beijing and asks her to check prices on the internet, so that he can find out whether he is getting a good deal at the county store. Mrs. Tao runs a small transportation company with her husband, and cannot use the internet herself, but often asks her daughter to research potential business contacts online. It is nothing that the landline cannot do, but mobile phones magnify the possibility by the simple fact that they are portable, which is particularly important in countryside, where people tend to spend more time outside or visiting neighbors, friends, and business contacts, than at home. Such possibilities are then explored and concretized with guidance and help from the gift giver—this, too, being a facet of the duty to give.

Finally, gifted phones are rarely 'cleaned up' by their previous owners, so the new owners inherit music, photos, e-books and anything else that was loaded on the phone. The reaction to this inheritance depends very much by the age of the new owner. Young people like Long Bing can fully leverage both the content and the functions of old phones, and use them as a window into what is fashionable in the city in terms of songs, games, etc. He uses each of his four mobiles in the way that maximizes its strengths: the one that used to belong to his sister has the best music, another one can go online, one has the best sound so he uses it to call, one has good novels, and his father's old one has good games. His primary phone is the one he uses for making calls, so when he goes around on his bike or to visit friends, that's the one he carries, but at home he uses each one according to its function. His mother's favorite function on her phone – her eldest daughter's old one – is the camera. She has never owned a camera, and the family has only a few photos taken by a photographer on special occasions. Since her daughter has shown her how to take pictures, she has used this function a lot, but she doesn't know how or where she can print out the photos, so every now and then she goes through her entire collection and deletes the older or less interesting ones. For a while she kept some of her daughter's old photos that had remained loaded on the phone, but then she deleted them to make space for her own. For owners who never go beyond the basic functions, existing content is neither a positive nor a negative aspect, because they cannot access it and often are not even aware it is there. Even something that is often taken as a basic

function of a mobile phone, the address book, is usually ignored by older users: they keep an old-fashioned paper address book, and that is where they write their new contacts or look up numbers when they need to make calls. In many cases, there was no need for an address book at all, because the only calls that were received were those of the children, and if the parents needed to make a call, they would do so from the landline and read the number off a piece of paper placed near the phone.

7. Conclusion

In this chapter, I have followed the travels of a few mobile phones as they are purchased in the city by migrants who are establishing their newly-found urban status, and as they are then gifted to new owners in the countryside. I have highlighted the role played by family members in this circulation of commodities, in particular the duties that are attached to the gifts, but also the relationships that are renewed, or made possible, by them. In a domestication perspective, the role of 'gifters'—or, more generally, intermediaries—in 'initiating' a user into the domestication process of ICT is largely ignored. However, in places that are still at the fringes of a fully-organized consumeristic society, and which therefore do not have shops, advertisement, or people using certain commodities everywhere, the role of intermediaries is crucial in bringing the commodity into the lives, but also the imaginary, of local residents. Intriguingly, the role that migrants can play in bringing ICT to the countryside did not escape the Government. In a White Paper published in 2001, that summarized all the initiatives taken to reduce poverty in the countryside, the authors stated that:

"To increase the chances of employment and the income of workers in poor areas, the state encourages and organizes the transfer of labor from areas favorable for such transfer. Such labor transfer will not only increase the employment and income of workers from the poor areas, but, more importantly, it will also enable these people to learn new technologies, life-styles and working methods from the places where they work, to broaden their outlook, increase their self-confidence and improve their ability to develop independently. Many migrant workers from the western region have become envoys for spreading in the western region the modes of production, life-styles, culture and technologies from the more developed eastern region." (Information Office of the State Council of the People's Republic of China, 2001)

But such a role has never been exploited in a systematic way. In fact, the efforts to informatize the countryside posit that an increase of ICT and ICT use will bring development, i.e. the reduction of rural poverty, the improvement of living conditions of rural residents, and the narrowing of the rural-urban socio-economic divide. But exactly how this will happen is largely a black box, or rather expected to happen through the resources mobilized by the state in an uneven way that is mostly detached from the realities of local communities. Rural residents are expected to buy ICT, learn to use it at a telecenter, or at school if they are students, and then apply their newly learned skills to improve their lives. But in reality, it is family networks that are playing the most important role in bringing informatization to the countryside. The institutional (schools, but also government incentives to buy devices, or programs similar to Teach for America where university graduates spend time in villages to help local officers in a variety of tasks that can include internet use, which I will discuss in chapter six)

and commercial (mobile phone and computer shops) channels that support the diffusion and distribution of ICT in urban areas exist in the countryside too, but they tend to be used by younger people, returned migrants, or rural families making a purchase for a child, rather than for themselves. The majority of older people, especially women, would probably be cut off from the 'informatization' wave if it weren't for family members who act as their intermediaries. As mentioned above, these are all 'unimagined users' that don't really appear in the plans for the informatization of the countryside, and whose reasons for wanting, not wanting, using or not using, a mobile phone are not related in a direct way to the reduction of rural poverty. As Mrs. Long's frustration with her new phone that did not include a usable radio and was too hard to use shows, assumptions about 'what makes a good phone' and 'what makes effective informatization' are drawn from particular situations. Moreover, knowledge about ICT and their possible and appropriate uses, is also brought in by migrant workers, who acquire it in urban areas. In writing about commodity flows, Appadurai notes that they "represent very complex social forms and distributions of knowledge" (Appadurai, 1986:41)—and an aspect of this knowledge is how to "appropriately consum(e) the commodity" (Ibid.). As the distance between the places where commodities are produced and those where they are used increases, so do the idiosyncrasies related to their use, and the role played by the intermediaries' understanding of the commodity. These issues will be the focus of the next two chapters.

Endnotes

1. Little Smart (*xiǎo língtōng* 小灵通) is a personal handyphone service (PHS), a technology that was originally invented in Japan but was never very successful. It is based on a wireline network, but with a wireless local loop. In other words, it is like a cordless phone with a wider range, or like a mobile phone with only local service. The cost of building a local loop is much cheaper than the cost of a wireless network, and this is reflected in the fact that Little Smart handsets and service plans are much cheaper than regular mobile phones (Wu, 2007:60). The number of Little Smart subscribers grew from 1.3 million in 1999 to 84.5 million in 2007. The number of subscribers to regular mobile phones in the same period grew from 14.9 million to 360.9 million respectively (Qiu, 2009:4).

2. There might be some gifting of mobile phones to express romantic interest among younger people—in fact, Ms. Deng in Village A, spoke of her first mobile phone as the gift from a 'family friend' who might have been something more, but I did not enquire specifically. There is more gifting of mobile phones between girlfriend and boyfriend in urban areas, but as far as I could observe it was a gifting that went both ways, i.e. young women gifting a new or used phone to their boyfriends and viceversa. In the countryside, I never came across any gifting of mobile phones from married men to women outside their family in a way that could express a romantic interest—that is not to say that it does not happen, but rather that if it does, it is kept well hidden and not shared with a stranger.

3. There doesn't seem to be any survey that focuses on details of ownership and circulation of ICT, as noticed by (Bu, 2012) and, outside China, (Burrell, 2010).

4. From a popular Chinese proverb (*jià chūqù de nǚ, po chūqù de shuǐ* 嫁出去的女, 泼出去的水). Daughters were considered worthless because when they married they joined the husband's family, and would therefore take care of his parents in their old age, rather than of her own parents.

4 | The Sent-Down Internet: Going Online at the Margins

1. Introduction

Let's begin with the numbers. The first is about rural internet users: the latest CNNIC report, with data from 2011, puts the number of rural 'netizens' at 136 million (CNNIC, 2012). This represents an increase of 11.13 million from the previous year, but as a percentage of the total number of internet users—558 million—it is in fact a decrease, from 27.3% to 26.5%. The second number is about older users: the percentage of users over 40 years old is slowly but steadily growing, and has now reached 31.6% of all users. These older users have a lower educational level than earlier adopters (in 2011, 8.5% of users had elementary schooling, 35.2% had attended middle school). This means that the internet is gradually finding a place in the lives of older, less educated people, and although there are no specific data about older users in the countryside, some of these users are likely to be rural residents. Quantitative data are often difficult to interpret, and these in particular are a puzzle to understand, as they seem countertendential: infrastructure availability (Liu, 2012), the increase of incomes in the countryside ("Income Gap between Urban, Rural Residents Narrows." 2012), and the number of returned migrants ("Welcome Home," 2012) would suggest a much faster increase in the number of rural netizens than statistics show. Adding to the puzzle is the fact that in-depth— by now dated—secondary sources on information and communication technologies in rural areas (Qiang, 2009; Zhao, 2008a) indicated a rural diffusion of the internet that promised to be just as dynamic as in cities.

In this chapter, I discuss types of rural internet users and patterns of internet use that could help interpret the quantitative data, and illuminate types of use that are very different from urban ones and might therefore escape statistical categories. In the countryside, users might not be aware that they are using the internet (for example when using QQ on their mobile

phone, or using torrent software to watch movies); they might present a seasonal or age-related pattern of on/off use that is uncommon in urban areas; and they might be able to use the internet only with the intermediation of other people. Such uses can escape surveys, interviews, and even superficial observations. The most common answer I received to the question "Do you use the internet?" was a firm "I cannot (*bù huì*不会)," and only participant observation and further probing showed the richness of use behind this answer. If for any rural internet user we imagine a 'network effect' that allows parents, grandparents, young children, and less educated people to go online with the primary user's help, we can start looking at the CNNIC numbers on rural usage differently.

Computers are slowly making their way into the countryside, and unlike mobile phones, they are typically bought locally by rural residents. There is no gifting from migrant workers, because very few of them own their own computers: their typical urban living conditions, in shared rooms in communal dormitories, do not have secure storage places where laptops can be left when their owners are at work. However, migrant workers frequent internet cafes, and sometimes have access to computers at work, and they bring their expertise to the countryside when they visit, as I will discuss. Rural computers are beginning to be purchased by specific segments of the rural population: returned migrants (Wallis, 2012a), families with school-age children; and young married couples. And even more than with mobile phones, once the technology is available, unexpected uses by unexpected users begin. These chapter is about some of these 'unimagined users' we discussed earlier: who they are, and how, after having incorporated mobile phones into their lives, they domesticate computers, make sense of the machines and of the internet, and then use them in environments that are very far from the research centers and cities where ICT are imagined, created, and tested. I focus especially on the 'objectification' and 'incorporation' phases of domestication (Berker, Hartmann, Punie, & Ward, 2006; Silverstone & Hirsch, 1992). Objectification is about the physical disposition of technology within the dwelling where it is adopted: where a device is located, who has or doesn't have access to it, who can and cannot control it can reveal power relations within the family and whether technology becomes a battlefield for their renegotiation. I contrast the objectification of computers, or rather its lack, among migrant workers living in urban areas, with the successful, if often peculiar, objectification of computers in the countryside, in order to highlight how factors that are rarely considered in the exploration of what makes people adopt technology (for example having or lacking access to secure storage) are just those factors that can make the difference between owning an ICT device or not. In the second part of the chapter, I focus on the incorporation of computers and of the internet, how they become part of the daily routine of their owners and/or users, how they fit into their existing activities, whether and how these activities are modified, where the disjunctions are, and on the role that 'intermediaries' play in the entire process.

2. Objectificaton

In the urban lives of migrant workers, the objectification of computers is much harder than the objectification of mobile phones. It is difficult enough to keep mobile phones safe when living in small, crowded, shared rooms in dormitories, as most migrants do (Law & Peng, 2006, 2008; Wallis, 2012b; K. Yang, 2008). All of my Beijing-based interviewees had had at least one mobile phone stolen (although it is such a frequent event, that the word generally

used is 'lost'), often apparently while they were asleep. A reason why they felt they could spend substantial amounts of money on mobile phones was that they could carry them along at all times, including at work, even if they had to wear a uniform. With a computer, even the smallest laptop, this was not possible: the only (semi) private space in their rooms was their beds, but leaving anything of value there was considered too risky. In the early days of my fieldwork, in summer 2007, computers were the only way migrant workers could go online, and they would be typically used in the ubiquitous and cheap internet cafes scattered around the city. In the following years, there has been a crackdown on urban internet cafes (Qiu, 2009), which are now less visible and slightly less accessible, and an uptick on mobile internet use. In the following years, more and more interviewees used mobile internet on a daily basis, thanks also to very affordable monthly subscriptions (the cheapest available in 2009 was CNY5 per month, approximately US$0.80). My informants kept their visits to internet cafes for their days off, when they could spend the entire day there and take full advantage of the big screens and fast connections.

The fact that computers are rare as personal possessions does not mean that they are not an object of desire, which is often expressed as a future plan, almost as a symbol of the expected improvement of future living conditions. For the few who already enjoy better housing, computers become an immediate reality.

Among the Beijing interviewees, Ms. Song and Ms.Wu stopped living in dorms in the course of my fieldwork. Ms. Song got married and found a small apartment with her husband and, later on, their son and her husband's parents. Ms. Wu left the massage parlour where she was working to set up her own business with a few other young women she had met in previous jobs, and lived with them in their shop-cum-living space. For both of them, the purchase of a computer came almost as soon as they moved to the new places. Ms. Song shared a laptop with her husband, and Ms. Wu also bought a laptop, which was her own personal property, but which was nonetheless used by all the other women almost as communal property (when they split up, however, the laptop stayed with Ms. Wu). Both women lived in rather small places that did not have much spare furniture, and certainly did not have a desk or a special place just for the laptop, but both made do with the space available. In Ms. Song's house, the computer was placed on top of a short chest of drawers, right by the bed/sofa in the room that served as living room/spare room/foyer. The primary user of the computer was her husband, followed by Ms. Song herself, but her mother-in-law often asked her to show her the photos and videos of her child, so that she could see how fast he was growing.

In Ms. Wu's small apartment there was just one low and skinny table (what in the US would be considered a coffee table), that was used for preparing food to cook, for eating, and as a shelf for plates, glasses, and miscellaneous objects. The laptop computer found a place on this table, and the keyboard was covered in plastic so that it would not get dirty. When Ms. Wu or Ms. Ling, the most assiduous users, wanted to check their QQ accounts or other personal sites, they would grab the computer and bring it with them to the couch or to their bed. Most of the time, however, the computer stayed on the table, and its use was a collaborative affair. Sometimes Ms. Ling would select an online game and be the main player, but everyone else chime in and help her play it, often in very physical ways: using the keyboard with her, pointing at specific areas of the screen, grabbing the mouse to move the cursor around,

even temporarily taking the computer away from her. Ms. Wu liked watching Japanese and Korean movies and television, which she typically found on streaming video sites at first, and as downloads later on. Her passion was not shared by everybody, but the same kind of negotiation there had been when the women owned a television and needed to decide more or less democratically what to watch happened with the computer. As the official owner of the computer, Ms. Wu had more of a say on what to watch, but she often yielded to the majority. In both cases, the combination of limited space, no specific desk or private space for the computer, and a general habit of intensive sharing of daily activities contributed to situate the computer in the middle of the living space, almost like an updated version of a hearth, which in turn contributed to a cooperative use of it.

In the three villages, the situation was somewhat different. They all had ADSL internet connection, but only the village in Hebei had a significant number of computer users. The village is close to a town, and people there were in general better off than in the other sites, mostly because everybody, including older people, could easily find casual jobs nearby, or had family members who had migrated and helped financially those left behind. Proximity to the city also meant that there were more shops, and it was easier to find a variety of cheap computers, as well as installation and trouble-shooting assistance. As a result, several families have computers at home, and among my interviewees and from conversations in the village, there were three major motivations to buy (or start using) a computer. Families with children in school typically buy a computer 'for school purposes'; young married couples receive one as a wedding gift; or couples with grown children may get their children's older computers when they buy new ones. This meant that in many households there was a computer as well as someone, resident there or visiting regularly, able to use it more or less proficiently, to teach other people how to use it, or take care of the harder tasks (starting the machine, connecting to the internet, opening a browser, finding a website or a particular program) to allow them to enjoy online games, tv and video watching, and video calls. As in the city, the prominent location of the computer in most houses contributes significantly to the rather widespread use that I encountered.

In the three villages, everybody lived in a stand-alone house with a small walled yard, so space was usually not an issue, especially for houses that had been newly rebuilt with migrant workers' remittances. But as the traditional, two-room brick buildings were torn down and rebuilt as big, sometimes two-storied, cement houses, the issue of how to fill the newly-created space was still being negotiated, with elements from old houses transported, sometimes awkwardly, into the new ones.[1] Most houses were sparsely furnished, while the family saved money to buy furniture, or decided how to allocate rooms to different activities and to different people (a married son, an old parent). As in the urban residences of migrant workers, desks were rare, typically found only in families who had a child at university, or more educated family members. In those cases, the computer was put on the desk, but the desk was usually in a very central position in the house: in the living room, or in the entrance, or next to the television, i.e. in places of high traffic and visibility.

Even without the constraint of space that characterized the urban dwelling, the computer ended up at the center of the house, and its use was not hidden in bedrooms or studies, but instead observable by anyone who walked in, family members and visitors alike.

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Mrs. Yang saw her daughter watching videos, which led to her watch dance videos, as I will describe below. A neighbor was visiting a friend and saw him watching television on the computer, so he asked how he did that and got his help to download torrent software on his own computer. Seeing the machine constantly used made it more familiar, more 'domesticated'; a casual observation of what more expert users were doing on it created opportunities to *see* something interesting done by someone else, rather than being suddenly confronted with endless possibilities and no concrete entry point. Mrs. Yang and her neighbor's stories would seem to suggest serendipitous encounters with what turned out to be the specific 'meaning of the internet' for these individuals. But far from being mere luck, these encounters were the result of very specific combinations of factors that were common among most families: a lifestyle where spaces are not strictly divided into private (a bedroom) and communal (a living room) spaces as in most Western countries, and where the computer is more similar to the television, in terms of its position in the household, than to a mobile phone, which is a personal and private device; a more expert user who carries out a variety of online activities that can be observed by anyone who walks by; a specific activity that sparks the interest of another member of the family, a novice or only a potential user; and the more or less gracious willingness of the expert user to guide the novice to a certain, sometimes very limited, autonomy of use.

3. Incorporation and Intermediation

Children are often cited as a crucial factor in deciding to buy a computer, as parents do not want them to be left behind at school and miss out on opportunities that urban children have. Mrs. Kong's daughter was seven years-old, and just beginning to learn to write Chinese characters, but she could already find QQ games on the computer, and chat with her aunt in Beijing using QQ videos. The aunt was the one who originally bought the computer, and started the objectification and incorporation phases of domestication by placing it in an area of the house where it was accessible by the rest of the household, and by using it alongside her niece and other family members, until going online became part of the family routine. When the aunt moved to Beijing, she left the computer behind so that her niece and her family could use it. It is interesting to note that in cases where the computer remains the 'domain' of only one member of the household, his or her departure usually means that the computer is no longer used. This was not uncommon: if young people left before their parents got interested enough in the potential of the computer and autonomous enough to operate it, the machine was usually abandoned until the original user came back, and started again the process of incorporation into the household. The young Ms. Kong was not so autonomous that she could search, or use instant messages—in fact, she had just began to study characters and *pinyin,* i.e. the transliterated version that uses Latin letters, at school and could barely write—but she was very aware of the marvels that the internet offered her, and skillful at finding new games by clicking on icons, or asking for help and imitating her mother and her aunt. Or Mr. Guo's six-year-old son, who had been using a computer for more than a year when I talked to his father:

> *"Last year, at Spring Festival, my son started using the computer. I taught him how to use the mouse, so he watches cartoons by himself and plays simple games. I find them for him."*

Mrs. Tao and her husband, on the other hand, could not use a computer themselves, but had bought one when they were still living in Tianjin as migrant workers:

"We bought a computer in 2006, for my daughter. We paid CNY6,000 for it (around US$700 at the time)! She was in middle school, and she started using it right away to browse. She was 12 at the time. For her it is really, really useful for school."

Or Mrs. Li, a returned migrant in Village A in Shandong, whose husband had learned how to use a computer in internet cafes in Shanghai, and had decided that it could be a useful tool for work once they came back to his native village:

"We bought (a computer) so that our children could start studying a little earlier, and would have the same opportunities as city kids."

This last computer is one of the two in the village, and for now it is mostly used as a television screen, and as a game console for the nine-year-old daughter. In fact, playing games and chatting on QQ, rather than 'looking up material for school' is the main activity for children (and adults) of all ages. The daughter of Mrs. Tao tells a rather different story of computer use than her mother. She recalls how when they were living in Tianjin her father came home with a computer for her; she was extremely happy, as until then she had only used it in other people's houses, and started right away to play video games, which she bought and exchanged with friends. Her parents did not allow her to have the internet until 2009, because, despite her mother's protestations that it would be useful for school, they actually thought she would waste precious time that could be dedicated to homework. As soon as she was online, she started using QQ, with which she was already familiar from her trips to internet cafes with classmates. Now she is very proficient at using the internet—games, QQ, videos and music are her favorite activities, but every now and then she helps her parents to look up information for work. Neither parent has learned how to use the computer autonomously: her father usually asks her, and her mother depends more on her daughter-in-law. In fact, children often become the technology experts in the family. They learn the basics of computer use in computer classes in middle (and sometimes even elementary) school. Although computers were typically not connected to the internet and each machine had to be shared between several students, the classes allowed all the students to become familiar with *pinyin* input and basic software use. After class, many students would assiduously practice their newly acquired skills in internet cafes, under the tutelage of older friends or relatives. Thus even children who do not have computers at home are familiar with the technology and the opportunities it offers, and once their parents, relatives and neighbors acquire a computer, they are the ones called on to help.

The role that school-age children play in bringing ICT, or at least information about the potential of ICT, to their family has been noted by other scholars (Zhao, 2008b), and unsurprisingly, interviews of young migrants in Beijing confirm that this pattern of computer learning and the consequent children-to-parents training is common in other parts of China as well. For example, Mr. Qiu, a young man originally from Henan and currently living in Beijing, learned how to use a computer in his last year of elementary school. He had three classes per week, and learned how to type, how to open and save documents, and other basic tasks. When he was 12, he started going to an internet cafe with his classmates, where, he said, there was

always someone older to teach them, or simply to watch and imitate. The first thing he did in an internet cafe was to set up his QQ number and chat with strangers; at the time, it cost CNY1.5 (US$0.20) per hour, so he would skip breakfast to save the money for his daily online forays. At 16, he finally got his own computer, and when he moved away, first to Shanghai and then to Beijing, the computer remained at home with his parents. Before leaving, he taught them how to use QQ, because he thought it would be a good way to remain in touch, and cheaper than calling by phone:

> "I didn't have much patience, because I had to repeat everything over and over and would get frustrated. At the end they finally learned how to use video QQ, and we could video every couple of days, if I had the time to go to an internet cafe in Shanghai. My mother was a better student than my father, she paid more attention and had more patience. My father became frustrated very quickly and didn't want to listen, which made me mad and even less patient."

Now his parents, both in their late 40s, are more autonomous in their computer use, and at times his father is even using it for work, but Mr. Qiu remains the source of knowledge and advice for all things technical. The role of 'technical consultant' is a typical one for migrant workers, be it from a distance, as in the case of Mr. Qiu, or during visits home, or after returning to the village for good. Being in the city exposes young migrants to novelty, in terms of technologies, as well as in terms of fashionable websites and games, or new software to watch film and television, etc. (Chu & Yang, 2006; Wallis, 2010, 2011). When they go back home, they spread this knowledge among their social networks – younger siblings, school friends who have remained in the village, parents and relatives. Returned migrants are also often the ones setting up small computer shops (Wallis, 2012a), and integrating technology into their business. Mr. Hu, in Village B in Shandong, graduated from a teachers' college in Jinan and spent his early 20s in a nearby city, teaching English and computer classes. He went back home one year because his father was sick, and then decided to remain, because his parents were getting old and needed his help, but also because he missed the slower pace of rural life. To make ends meet, he had the makeshift collection of jobs that characterizes the lives of many young rural residents, as I will discuss in the next chapter: he farmed his own and his parents' land; he had transformed the front part of his courtyard into a parking space for

FIGURE 1: **Mr. Hu's 'Computer Hospital'.**

bicycles and motorbikes; he occasionally acted as a cab driver, taking people from the bus stop to villages further away in his minibus; he taught computer skills and basic English to a few elementary school children; and he had opened a 'computer hospital' right in his house.

Mr. Hu said that most of the computer issues that his clients brought him were not serious problems: sometimes there were mechanical issues such as keys missing from the keyboard, keys pushed inadvertently that lock programs or change something on the screen that users aren't able to change back, or disconnected cables; sometimes the dust that penetrates every surface in villages with unpaved roads became too much for the computers' fans; sometimes there were viruses that slowed everything down, or created other errors.

One day, when I was visiting his shop, a young man brought in a desktop and declared it broken. Mr. Hu put it on a chair, and connected it to his own monitor. There was no signal, so he disconnected it and took off the back of the tower to see what was the problem inside. The back came off followed by a cloud of dust: everything was covered with a thick patina of reddish dirt. Mr. Hu started cleaning everything carefully, then disconnected the motherboard and cleaned that too. A short while later the computer was up and running, connected to Mr. Hu's monitor and downloading an anti-virus program. During this entire time, the owner of the computer, a local farmer who was more or less Mr. Hu's age, watched intently every step of the repair operation; he did not seem to be very comfortable with computers, but nevertheless asked a few questions.

Mr. Hu was very accessible: he explained all the steps he was taking with the diagnostics, and was very warm and patient. Later, as we were talking about the potential for the 'computer hospital' to grow, he acknowledged that by itself the business would not be a sufficient source of income: too few people were actually buying computers, and too many people brought him computers to fix that did not need much fixing, so he had to spend time to diagnose and clean the machine, but could not charge much for it. Still, he saw the shop as only one part of his diversified income portfolio, and valued it more for its potential than for its current value: he thought that technology in the countryside could only grow, and that if he got in the market early, he might be in a good position in the future. He also saw his role as very much the role of a teacher. He had liked being a teacher in the city, because he had felt useful: teaching children English and computer basics, and explaining his computer repair work to his clients was a way to continue in that role.

In a domestication perspective, he was helping households with the process of incorporation of the computer in their daily life, which he could do because of how embedded he was in the community. When he showed me around the village, he stopped and exchanged a word with most of the people we ran across, and introduced me to most of the village shop-keepers, who all knew him well. His shop and his business were a de facto a extension of the village's households, and the mix of his technical knowledge, enterpreneurship, and personal ties provided an anchor for attempts to use technology that might otherwise have failed.

Clearly not all computer shop owners see their roles as a mix of entrepreneur and more or less free helper, and in fact he might be the exception: he and his family had other, reliable sources of income, and could afford to run this as an experimental activity. But among other young returned migrants who are trying similar activities—Ms. Hua who ran a mobile phone

store in Village B, Mr. Lin who had just opened a computer store near Village C—there was an agreement that an important part of their activities consisted in setting up mobile phones and computers for their clients, helping them in figuring out the basics of use, and occasionally even looking up information online on their behalf. All these services, usually performed for free, impact profit, and make such businesses hard to sustain over time, as noted by Wallis who recounts the story of a couple of migrant workers who had set up a computer selling business, but had to close it after a short time due to too much time spent coaching people and fixing non-existant problems, and too little time spent selling actual machines (Wallis, 2012a). From a community perspective, however, these small businessmen, together with young kids and migrants, contribute to creating an environment that allows a diverse set of people to become familiar with technology, and to use computers and the online world, even if only through an intermediary.

The role of intermediaries can be temporary, as in the case of Mr. Qiu teaching his parents enough that they could become independent users, or more permanent, as in the case of the young Ms. Tao, whose parents would not learn how to use the computer by themselves. This is often the case of older women, such as Ms. Tao's mother and many other women in all three villages, who had not had much education in their youth, who, as we have seen in the previous chapter, often could not afford to buy a computer or even a mobile phone by themselves, and so depended on family members for both devices and instruction on how to use them. However, once they have access to technology, they are often able to integrate it into their lives and expand their existing activities. Mrs. Tao has had a mobile phone since 2008, initially used only to stay in touch with her husband when he was away for work. More recently, however, she has discovered new functions, and she particularly likes reading romantic novels on her phone.

> *"My phone also has e-novels."* (Q: Are the novels already on the phone?) *"No, you download them on the computer, and then you transfer them to the cell phone. The phone can't go online, it has no internet access."* (Q: So, how do you find the novels?) *"I don't! It's my daughter-in-law, she finds them on the computer, and then downloads them for me and puts them on my phone. I can't use the computer myself, it's usually my daughter-in-law who opens it for me, and finds me games, like 'Landlord' [a card game], mahjong, things like that."*

The daughter-in-law also taught Mrs. Tao how to take pictures, and subsequently every time they visited, Mrs. Tao took pictures of her grandson. Watching other people use technology—both family members and their peers—is perhaps the most common way many women become curious about computers and their specific functions. In this sense, for older, more marginalized people, living in a village provides a distinct advantage compared to living in a city, because different generations of a family still live together, and there is more 'communal life' such as impromptu visits to neighbors, daily chats on the way to and from the fields, and time spent outside sitting and chatting in small, heterogenous groups. This allows people who are outside of the circuit of fashion, modernization, advertising, and technology use to be exposed to these phenomena, and to keep up-to-date with what younger, more educated and more urbanized people such as their children and grandchildren do. In early studies of technology domestication in the UK, it was noticed that for many older people "the computer was beyond their horizon not only because it would be difficult to master but because they could not envisage how they would fit it into their lives and routines" (Haddon, 2006:114). When the 'unimagined user' is surrounded by family members and friends who using tech-

nology and can observe first-hand their actions and the context of these actions, then the internet becomes something concrete like a card game, or a QQ video call, or a different way to watch television, rather than an abstract concept tied to the city, a different economy, a different world. For Mrs. Ouyang, whom we have encountered in the previous chapter as the owner of a drawer-full of gifted mobile phones, a computer was something completely alien to her experience and the way she saw herself in the household and in the village. She did have a computer at home, but adamantly said that she could not use it at all:

> *"I can't do anything at all on a computer! (**diànnǎo shénme dōu bù huì** 电脑什么都不会！)"*.

However, much as with Mrs. Tao, it turned out that she could not use it autonomously, but she knew about several features, and with the help of her son she could play cards online, as well as use video-conferencing to talk with her daughters. Her experience exemplifies how a personal support network, the opportunity to learn about and learn to use ICT, and the motivation to continue using them must all come together in order for older people to engage in meaningful and long-term use of technology.

> *"I have a computer at home, but I can't use it."* (Q: Not even a little?) *"No, not at all. (...) We bought it in 2008, when our son got married."* (Q: Did he buy it or did you buy it?) *"He was so young, where would he have gotten the money?! Of course we bought it, as part of the furniture we bought him when he got married. (...)"* (Q: Did you buy the computer yourself?) *"Yes, we went to a specialized shop in the city. The elder daughter came back (from Beijing, where she is a migrant worker) and went with her brother to choose it, because she knows those things. We paid 5,400 RMB, it has a flat screen, very big. For a lot of things like that, it's our daughter who helps buying them, because she lives in the city and has been in different places, so she knows what's fashionable, what's useful, etc."*

'Unimagined' users can be unimagined also to themselves. They cannot see an abstract connection between their lives, experiences, and desires, and a computer and the internet. They do not imagine how either could fit into their lives before they are exposed to them and, importantly, before they have the time to decode the new activities that are on offer and find possible matches with their experiences. They figure out how to think about the internet as they are helped by other people in exploring which of the possibilities offered by the technology might fit them, rather than imagining such possibilities first, and trying to enact them later.

> *"Me? I can't use the computer! The first time I touched it I didn't know anything, so my son taught me how to use the mouse. But that was two years ago, when we bought the computer. Now I can use the mouse."* (Q: Do you go online?) *"No! I can't! But sometimes when my son is online and plays a game I tell him I want to play too, and then he finds a card game for me and helps me play. But I don't play for a long time, because my eyes are not good, and I'm also afraid of ruining the computer... When I see my son playing, then sometimes I ask him to let me play. But not if he's playing war games, those I don't play, only when he plays cards then I join him.(...)"* (Q: Does your computer have a video?) *"Yes, but I can't use it."* (Q: Has your son ever used it when you were there too?) *"Yes, we call my second daughter. I saw things on the video, too. I can talk to my eldest daughter, the one in Beijing, and see her, and I can also talk to my other daughter, and see her, her husband, and their son. The first time I thought it was fake, but then I could see that the image moved, and you can see the other people clearly, what they wear, what they are doing... We always use it in the evening. It was a while ago. My son was at the computer, and he had QQ open, so I saw that my daughter was online too, and I asked him to call her, so I saw them. (...) I can talk to people who are faraway fast, you just turn on the computer and talk to them, like a phone. If I miss my nephew, I can just see him in video, I don't have to wait until they come to visit. That's really nice."*

Mrs. Ouyang barely finished elementary school, and had difficulties with *pinyin*, with moving the mouse around, and with understanding the various steps needed to open the computer and launch the software she wanted to use. There is no correspondence whatsoever between the steps necessary to arrive at the screen with the card game ready to go, and the actions she performs in her daily life, in an environment where electricity is still relatively novel, running water is absent, and so much of the daily interactions are dominated by agricultural rhythms. However, once she saw things she could relate to, such as playing cards, she immediately understood the utility that the internet could have for her own goals, and how it could fit into her daily life—after all, she already played cards with her friends several times per week; playing on a screen and with strangers was not that different, and in fact might provide some variety in terms of fellow players. For her, independent use of a computer is very unlikely, unless there are serious changes in the interface. For other women, a similar start in use—tutored by a family member—can result in autonomous use, even if sometimes fraught with difficulties, as Mrs. Yang describes:

> *"I started using (the computer) just now, to watch videos of dance."* (Q: For example?) *"Oh, well, whatever I want to watch, I just watch! I know about Baidu (a search engine), but pinyin is very difficult for me, so slowly slowly. My daughter showed me how to search, and then she usually finds the videos for me too, then once she finds the page with the videos, I know how to click to watch them. She also helped our neighbor (Mrs. Li) to search for videos of dances, and now Mrs. Li can find them by herself too. Sometimes we look for these videos together. But it's hard for us."*

What was difficult for Mrs. Yang was that she relied mostly on 'spatial' memory to reach the website that featured the videos. She had observed closely how her daughter arrived to the page not by following the abstract procedure (i.e. opening the browser, entering a search query, looking at the results and selecting a promising one), but rather following her movements around the screen (i.e. clicking twice on the browser icon on the upper left of the screen, then entering the exact same search query her daugher entered in the first window she encountered, clicking on the first, or second, or third link that came up not on the basis of their content, but because that was the link her daughter had clicked on). Any small change in the interface that required her to engage with text, content, or icons, rather than just with where these things were located spatially, was a big hurdle which could be overcome only with someone's help. Mrs. Li, who is slightly younger than Mrs. Yang, and who relies on Mrs. Yang's daughter and her own son for computer help, is more confident with entering queries in a search engine and interpreting the results, and she confirms the cooperative work with Mrs. Yang to look for dance videos:

> *"I can't do anything on the computer!"* (Q: Can you turn it on?) *"Yes, of course. Then Mrs. Yang's daughter showed me how to find a dance video I was looking for, because sometimes in the evening I go to the city with her mother to dance in the square. So I watched that."* (Q: Can you watch it by yourself, or do you need someone to show you?) *"I can do that by myself. I can also search for things, on Baidu and other search engines. Pinyin is not a problem at all for me. I studied it very well at school, I was born in 1971 and at the time, at school, we all started from pinyin, so I know that very well. I don't type fast, though; I'm very slow."*

The belief that computers are machines for more educated people, for younger people, for urban people and for men, is very widespread among men and women, so it is expected that women, especially older women, would not be able to use them. As Mr. Guo says of his wife, who is only in her late 20s, but who has never left the village,

> "She does use the computer, mostly to chat. She uses QQ. Because she's not well educated, so she doesn't use it much, she can't figure out a lot of functions, but she chats all the time."

But there is a positive aspect to this (self-)perception of inadequacy: women are more willing to ask for help, to be taught by their children, and to ask again when they forget or get stuck. Many middle-aged men did not like 'not knowing' about computers, and not being in a position to take them apart and figure out how to make them work, as they were—and are—used to doing with mechanical equipment. This was confirmed both by men themselves, such as Mr. Yang, a man in his mid-40s in Village C, who told his daughter that a computer had nothing of interest for him and that he did not *want* to use it (although it turned out that he did not want to be taught by his children, and would try to figure it out himself when they were not around), and by children who had tried to teach both parents how to go online. Mr. Qiu summarizes what many younger interviewees told me when he said that:

> "My parents can both use the computer now, because I taught them, but my mother was a better student than my father, because she was more attentive and patient."

4. Trajectories of Learning

> "Computers in the countryside are for games, it's only for entertainment, and then for chatting, nothing else. In the countryside, most of the use is just for these purposes... I play games with people I don't know. That's what you do on the internet, you always play with people you don't know, you just go online, and then find people and start playing. I told you, it's only about entertainment; people in the countryside don't use computers for business."

This is a commonly held opinion of the rural internet, shared by urban-based observers and rural residents alike. And indeed, there is a lot of online activity centered around playing games, watching tv and videos, or chatting on QQ. The sophisticated internet of searches and business is left to urban residents, and the 'browsing for school material' is a lofty goal for students that is never really expected to be fulfilled. But seeing the rural internet as simply a tool for economic development, and contrasting a useful, urban internet use with a time-wasting, rural internet use geared at games and entertainment is short-sighted and ultimately pointless. Entertainment has been and still is one of the main drivers of internet use worldwide[2] and dismissing it as useless "masks an elitist and biased conception of internet culture and popular culture more generally" (G. Yang, 2011). Moreover, entertainment is a way to get familiar with a technology that is very unfamiliar and without ready precedents, especially in rural settings.[3] None of the interviewees cited above—Mr. and Mrs. Li, Mr. and Mrs. Yang, and even less Mrs. Ouyang—consider the internet as a tool with the potential to dramatically change their lives, or job prospects. Rather, they see it as another tool in the weaving of social relationships and personal time, which can supplement—but not substitute for—existing social practices. All the migrant women I began following in 2007 in Beijing started to use the internet in the same way Mrs. Yang, or even Mrs. Ouyang, started: they followed a friend or a co-worker to an internet cafe, and were shown the ropes by more

experienced users. Everybody was using QQ, so they signed up for QQ accounts, and chatted with strangers and sometimes with former classmates. People were watching movies, so they watched movies too. Gradually, their confidence with the technology and their awareness of both the opportunities and the risks presented by it increased, as did the sophistication of their use. They created new QQ accounts whose privacy they guarded much more carefully, and explored new ways of downloading music and watching movies and TV. Over the years, as their skills improved, especially in terms of online search, some women experimented with other ways of integrating the internet into their lives, from looking for jobs and places to live, to shopping, dating, and finding educational opportunities. Ms. Wu, whom I introduced above when discussing the location of computers in urban spaces, emailed me a few months after she and her colleagues had started to regularly use the computer[4]:

> *"We just bought an HP laptop. It's useless for work, but useful for our personal lives. We all worry about finding a boyfriend, so when we use the computer the most popular activity is to look if we can find one."*

Later on, Ms. Ling, one of Ms. Wu's friends who had learned to use the laptop with her, started taking Japanese classes online, and applying for jobs she found on specialized websites. Not all followed this path, and they have had mixed success, but they now have another 'weapon' to use in their survival strategy in the city. The same path is gradually being taken by some rural residents, who are moving from games to more 'business-driven' goals. The Tao family, who has a small electrical business, is trying to look for business opportunities online with the help of their son and daughter, although they usually follow up online leads with phone calls, because they think the phone is "safer." Mr. Li, who is a cab driver, has started looking up information about car repairs. Clearly, this behavior will not extend to the older generation of rural residents: they are unlikely to suddenly start using QQ by themselves on a computer or on a mobile phone, and then move to banking online. There are also objective difficulties that stem from the fact that computers were originally developed around the affordances of a Latin-based alphabet. For Chinese speakers, compared to English speakers, going from an alphabetical keyboard to onscreen Chinese characters requires a few extra steps (provided that all the appropriate software is installed, which

FIGURE 2: **A tablet for entering characters using a pen instead of a keyboard.**

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is often not the case): users need to type the *pinyin* version of the characters; a menu pops up on-screen with a choice of characters that correspond to the word, or sometimes to the sentence; users choose the character they need, and click on it, or press on the number corresponding to it. The software for inputting characters is targeted at an audience moving back and forth between Chinese characters and Latin letters, so it is very easy to accidentally switch from one system to the other without realizing what has happened, and not so easy to switch back if one is afraid of 'breaking the computer' as Mrs. Ouyang noted above. There are tablets that can be connected to the computer which allow the user to input characters directly by drawing them with a pen on the tablet, but they are not widespread, and their character recognition rate is not great, especially when used by people who are not very educated and have forgotten characters or mix them up easily.

Besides *pinyin*, other problems arise from unfamiliarity with the interface or with the conventions of its use, which can be opaque even for younger and more educated users, as the following story told by Mr. Li and retold by his wife shows:

> *"I don't chat, though; I can't chat. I can't type either, can't at all."* (Q: Is it because of pinyin?) *"No, it's that it's too slow. One person writes to you one sentence, then you also write one sentence, it takes forever, it's not a pinyin question. Here in the countryside we type with one finger, we can't type otherwise, and it's too slow. There are some people who are better, especially young people, but mostly not. In the village there is a 30-year-old who can use a computer and can even fix viruses if they're not too complicated, because he's using the computer to play games all the time. He has a sense (**wùxìng** 悟性) for computers, but I don't."* Mr. Li, Village C

> *"My husband was playing cards online, in a game with four people, all strangers, who teamed up by chance. He and his mate lost, and the mate was cursing him, so he wanted to swear at him too, and wrote the swearwords in the dialogue box, but didn't know how to hit enter and send it, so was incredibly frustrated."* Mrs. Li, Village C

Mr. Li is young enough, educated enough, and willing to experiment (at least on his own), so he is becoming a more confident computer user, but older people are more dependent on their families to access the internet. Sometimes this access is direct—Mrs. Ouyang piggybacking on her son's internet use; sometimes it is indirect—people calling their children on the phone and asking them to look up information on the internet, as I will discuss in the next chapter. This 'relatives-mediated' way of using ICT is much more aligned with the traditional way that many rural residents have of finding, receiving, and passing on information, e.g. in person and orally, rather than in writing or through the mediation of unknown information brokers (i.e. website owners). In these conditions a search query can be formulated in normal words, without Boolean operators or *pinyin* to complicate the picture, and the results are evaluated by people who are trusted. Indeed, the results might not be the right ones, but the fact that they are delivered by familiar people makes them more reliable than possibly more accurate results delivered by unknown entities. In this way, even people who live far away from resource-rich areas like cities can still be connected to them through their personal ties as well as through appropriate and mediated use of new ICT.

It is important to note that the role of 'technology mediators' is played equally by males and females, both within the household and in businesses. Although many young women I talked to referred to computers as something for males, what they were usually referring to was what they saw as the need for more technical skills to use specific software, or build and

repair the machines. In terms of browsing sites, using social networks, listening to music, watching tv, there was both equality and the perception of equality of use among males and females. For older people, computers were the domain of the young, without much distinction between males and females. This situation contributes to a 'reconfiguration of the moral economy of the family,' that is the way "different families and households managed their finances, exchanged and used money and other material and valued objects as a way of maintaining peace, order and economic viability within their four walls" (Silverstone, 2006:236). In the case of ICT, there is a reconfiguration of both economic relationships and skill-related dependencies within families. Young people are empowered because they are the ones who know how to use computers and go online, even though their parents are the ones with economic power who can decide whether or not to buy computers and internet access. Older children who have migrated are the ones sending money back home, and bringing back mobile phones and computers for their families to use. This economic power shift contributes, to a certain extent, to a social power shift, where the old, still male-dominated generation defers to the younger one when it comes to ICT. This situation is well illustrated by the quote from Mrs. Ouyang above: she and her husband put up the money to buy the computer for her son, but it was the daughter who lived in Beijing who helped choose it, and the son who controlled it. Older women are often the ones with the least say about the practical aspects of getting internet at home: the computer is typically chosen by and belongs to someone else (children or husband). The decision to have an internet connection is usually taken by their husbands even when the family budget is held in common, and even when it is the wife who can and is interested in using the computer, as was the case with Mrs. Yang. When the husband or the children decide to take away the computer, or not renew the internet connection, women lose access to the technology in a rather definitive way (as we have seen with the phone in the previous chapter), as they don't even have the freedom to go to internet cafes that young people do.

5. Conclusions

The depiction of rural residents as people who are not taking up the internet because of their lack of skills and literacy (CNNIC, 2012) is misleading, and this chapter offers a counter-view, by showing that a focus on families and communities, rather than on individuals', and on the entire process of incorporation, rather than on a single point of adoption, might give a very different and more positive perspective on the diffusion, use, and usefulness of ICT among rural populations. As I showed, there are objective difficulties, but these should not obscure the richness of usage and of interest that exists in the countryside, and the amount of cooperation and sharing behind each rural IP address. If we look at the number of people using the internet from a rural rather than the usual urban perspective, we might see a grandmother and her grandchild piggybacking on internet use by a relative; we might see people who don't need to 'ask *baidu*,' because they can ask their neighbor, but who enjoy playing cards with strangers; we might see people who do not use the microblog *weibo* because in small villages the biggest problem is keeping news private rather than broadcasting it; we might see people who perhaps don't know what a computer or the internet are[5], but who can still video-conference with their grandchildren and play Farmville after having tilled the fields during the day.[6] Age, dependency on other people, economic factors, farming seasons (spring and summer are busy seasons in the countryside, so there is less time for leisure and therefore internet

use) all create an on/off pattern of use that I did not encounter in the urban side of my field-work. Unlike the two other ICT that dominate the countryside—television and radio—which have been completely incorporated into the household and individuals' lives, the internet is still in the process of finding its place. What I have shown in this chapter is that the process of incorporation relies heavily on the location of the computer in the household, and on the intermediation of more experienced users, who can show novices both what kind of activities can be performed on a computer or on the internet, and who can help them become profi-cient users. Superficially, these intermediators could be understood as what Rogers called "change agents," the key individuals who influence "innovation-decisions," or maybe "agent aides," the less educated influencers who are more homophilous with the targeted com-munity (Rogers, 2003:27-28). But these definitions are too reductionist: it is not the single, charismatic individual who brings ICT to marginalized communities. In fact, usually there is no specific intentionality on the part of more expert ICT users to bring the technology to their families and villages. It is rather an ad hoc combination of physical clues in a familiar environ-ment, of family and peers at hand to show activities and help with use, and of activities that are meaningful enough for potential users to provide the incentive to engage in the frustrat-ing process of learning. Familiar people and familiar activities represent the entry point for unimagined users. We will see in the next chapter how the incorporation of ICT breaks down when these elements are missing.

Endnotes

1. New houses have a foot in the past and one in the present, the latter often interpreted through the urban experience of migrant workers. For example, in traditional houses there is no separate kitchen: meals are cooked outside in the summer, and on a coal stove that is usually located in the main room during the cold season. New houses tend to have a room that serves as kitchen, but it is separated from the main body of the house, and to get from the house to the kitchen one has to cross the courtyard. Toilets remain in out-houses in a corner of the courtyard even when they are rebuilt with tiles and occasionally running water, typically from a well located in the courtyard. Bathroom sinks can often be found in new houses, but because there isn't a bathroom as such, they can be located in virtually any room of the house, from the living room, to the dining room if there is one, to the bedrooms.

2. See for example the latest Pew Internet & American Life Project tracking survey, http://pewinternet.org/Trend-Data/Online-Activities-Daily.asp

3. In What Video Games Have to Teach Us About Learning and Literacy, Gee makes the point that video games succeed in engaging users and getting them to learn new tasks because they present information that users need to perform an activity they are engaged with, rather than offering theoretical learning. The same happens with internet use, where students learn how to search so that they can find new games and interact with their friends. This provides them with skills that can then be transferred to other domains—although whether or not they will be transferred to other, more 'productive' domains depends on other circumstances.

4. Note that using email was itself a concession to my own habits, because at the time I was not on QQ, the most used instant messaging program. She used email only to correspond with me and when she needed an address for e-commerce websites. None of her colleagues ever learned to use email, and they remained in touch through QQ and text messages.

5. As the CNNIC Report puts it, "However, rural residents lack the skills to use computers and the internet, and this is a big obstacle that restricts the development of the internet in rural areas: in 2011, 57.8% of rural non-internet users said that they did not understand the meaning of computers nor of the internet." "然而农村居民自身缺乏电脑和网络使用技能是制约我国农村地区互联网发展的重要障碍：2011 年有 57.8%的农村非网民表示"不懂电脑/网络"是其不上网的原因" (CNNIC 2012:22)

6. Baidu is China's most popular search engine. It offers a service called 'Baidu knows' (*Bǎidù zhidao*) that is the equivalent of Yahoo Answers or Quora, where users can ask a question and be answered by other users. A popular ad for the service had the tag line "Ask Baidu; Baidu knows" and at the top of every page there is a link entitled "Ask Baidu". Weibo is a service similar to Twitter, which became very popular when Twitter was blocked from within the country.

5 When Technology Doesn't Fit: Information-Sharing Practices among Farmers

> *"You see, selling your crop is a bit like buying clothes.*
> *You might see something you like, but then you have to try it on, and see if it fits you –*
> *some things look good, but don't fit you, others do fit you.*
> *So when you sell, you look at the buyer, at the price,*
> *at what would be the difference if you sold for 1 cent more or less,*
> *and then you decide."*
> Mr. Cui, Village A

> *"It is a favorite superstition that because reason is peculiar to the human being*
> *it is his prevailing guide to action. Nothing could be much farther from the truth.*
> *Man... actually... is a creature of habits."*
> (Shryer 1912, as cited by Beniger, 1986:386)

1. Introduction

The previous chapters described different strategies people use to *incorporate* ICT into their daily lives more or less successfully, that is, to negotiate the phase of domestication when the desires, values, beliefs they have projected onto the ICT objects during the preceding phases of appropriation and objectification meet the reality and the routine of everyday life (Hirsch & Silverstone, 1994). However, the area where the incorporation of ICT seems to encounter the biggest hurdles is farming. ICT rarely becomes part of a farmer's way of doing business, whether it is mobile phones that get acquired, computers that might be accessed, or the older ICT such as television and radio that occupy a prominent place in every household. Agricultural prices are ubiquitously known, crops are routinely grown and sold, farming techniques are occasionally improved, but farmers gather and share (or not) all the knowledge needed for these activities with very little recourse to ICT. The central tenet of the informatization of the countryside is that "rural populations have dramatically increased their demand for new technologies, policies, and market information, and obtaining useful information in a timely manner has become critical to the rural economy and society" (Qiang, 2009:1); it is therefore worth exploring why the ICT that are already there and used in other areas of rural residents' lives do not find a place in the one activity that still dominates the countryside.

This chapter examines why ICT does not get routinely incorporated into the farming practices of the smallhold farmers in the three villages by looking at how the gathering and sharing of agricultural knowledge is organized, and at the accuracy of the crucial premise of the

informatization policy—farmers need to obtain useful information in a timely manner. So far, ICT has reached farmers mostly through family members who are not any longer connected directly to the daily work of farming. Because these people bring not only the devices, but also ideas about how and for what purpose the devices should be used—ideas which are the result of their own engagement with ICT in an urban environment—rural use tends to mirror urban use, and agriculture is very much excluded. There is what Appadurai would call a gap in the knowledge about the appropriate use of the ICT commodity: this has not prevented ICT from reaching the countryside, but part of the knowledge about what it could be used for has been lost along the way (Appadurai, 1986). How farming practices are organized and how ICT and training on their use reach the countryside combine to create a situation where it is very difficult for a mobile phone to become a useful tool for a farmer.

As I discussed in the introduction, in recent years the focus on the household as a unit of analysis in domestication theory has been criticized as being, in some ways, passé. The decline of the nuclear family in the West (where most of domestication studies have been carried out) and the "internal fragmentation of the household" (Morley, 2006:31) where previously family-based activities such as eating—but also watching television and listening to the radio—are now carried on individually, weaken the utility of the family as a unit of analysis, shifting the focus from the analysis of family dynamics of domestication to that of the perspectives single individuals. However, in the Chinese countryside, as we have seen in the previous chapters, the focus on the family is still valid, partly because even though households are often fragmented through migration, the family remains the unit of organization of the village itself. The case of farming is different because family life and farming life are kept very separate; new ways of doing things brought into one realm can easily be kept isolated from the other. ICT use is still something that is situated in the household, for family activities. Farming, on the other hand, is a distributed social activity, where the individual farmer makes individual decisions, but where these decisions are shaped by the decisions, expectations, examples and judgment of the community as a whole. As the quote above shows, decisions about farming are not one-size-fits-all decisions; the goal of this chapter is therefore to tease out the various factors that make a price fit one farmer but not another, and to redefine the concept of 'useful' and 'timely' in view of the actual conditions in the villages, rather than the conditions of the abstract, rational market imagined in the informatization policies. In other words, I aim at showing how the non-incorporation of ICT into farming activities is, for farmers in the three villages, both a consequence of how they learn how to use ICT, and a "reasonable response to their present situation" instead of the puzzling, irrational behavior it may appear to be (Granovetter, 1985:506). Rather than limiting myself to showing how ICT is not used within farming practices, I will detour to analyze in detail how information—about farming mostly, but not exclusively—is gathered and shared within the village. This, I believe, promotes a more holistic understanding of people's lives, rather than focusing just on the parts that are directly touched by ICT, and as a consequence makes it possible to see other uses of ICT in a different light.

2. Rational Behavior and Socially Constructed Markets

The failure to incorporate ICT in farming practices in China compared to other developing countries where, at least in the general press, mobile phones appear to have the potential to

change the lives of poor farmers ("Mobile Services in Poor Countries: Not Just Talk." 2011), is surprising for several reasons. As we have seen earlier, there is good mobile phone coverage, an electrical grid that reaches most of the country (and that, at least in these three villages, is very reliable), and increasingly widespread and good internet connections. The cost of calls on mobile phones is affordable by the vast majority of farmers, and internet access starts at CNY5 per month (approximately USD0.7), making it much cheaper, at purchasing parity price, than mobile internet in most developed countries. In previous chapters, I have described the obstacles that many people face when they input Chinese characters on a mobile phone or computer. But even though these difficulties make literacy a necessary but not sufficient condition for active use of ICT, the fact remains that most of the people in the areas I studied are not illiterate and can at least read, if not write fluently.

These factors, combined with the widespread availability of mobile phones and, increasingly, computers, should make rural China an ideal case study of how ICT can improve the lives of rural residents. And yet in the three villages these improvements have yet to extend to farming or economic prospects. Scholars looking at the diffusion and use of ICT in rural areas from an ethnographic or qualitative perspective have also noticed these trends (Soriano, 2007; Ulrich, 2004; Zhang & Yu, 2009; Zhao, Hao, & Banerjee, 2006; Zhao, 2008a, 2008b). These studies, carried out in different provinces and looking at different aspects of ICT diffusion in the countryside, show consistently that information-sharing practices among farmers are still heavily based on face-to-face encounters and on social relations in the village, even when more convenient, reliable, and cheaper alternatives exist. Even when survey data that show that farmers state that they are looking for information on agricultural practices and prices is considered, it is clear that what farmers say is often not matched by their actual behavior.[1] However, as I described in the introduction, policies and programs for the informatization of the countryside assume that there is a lack of specific agricultural information in the countryside, and that an increase in ICT devices, combined with an increase in the availability of specialized 'information' targeted at farmers, will increase the efficiency and productivity of agriculture and of the rural economy as a whole (C. Liu, 2012; Xia, 2010).[2] These policies are inspired by a neoclassical view of a market, which sees 'demand' and 'offer' meeting there to create the 'going price', and is a place where ICT can play a role in decreasing the cost of finding information (Jensen, 2007). This kind of market, in its ideal form, is an entity that is governed by its own internal (economic) laws, where price is the critical factor, where both market actors and goods are wholly commodified, and which is not influenced by external factors such as social and cultural conventions (Zelizer, 1988).

However, the type of market where the smallhold farmers I discuss in this chapter are active is still embedded in a wide-ranging network of social relations, and very much the product of the intersection of economic and noneconomic decisions (Geertz, 1992; Swedberg, 2011). The mass commodification of farmers and crops that is the necessary prerequisite for large-scale commodity markets has not developed yet, at least at this level. A combination of social factors and market conditions determines what people grow and how and when they sell, in a mix determined by how well villages and households are integrated with the general economy. The government has to thread a fine line between creating liberalized markets, economies of scale, and the efficiencies that are necessary to secure high productivity in the agricultural sector (a key state priority) on the one hand, and keeping millions of farmers who do

not have other opportunities employed and fed in the countryside on the other. Social factors still matter in rural markets, both for a government that wants to avoid mass exodus to urban areas with millions of people suddenly depending on welfare, and for individuals, many of whom consider farming as not only a source of income, but also a source of identity, pride, meaningful employment, and independence. The community is a locus of socially shared information that is not captured by ICT, as I will describe in the following sections.

3. How to Become a Farmer

To understand farming practices and farmers' behaviors in the three villages, it is necessary to understand some of the systemic characteristics of agriculture in China that have a direct impact on people's lives. In this section, I will first introduce significant features of farming and recent policies targeted at rural residents, and follow with a discussion on how people learn farming, and what consequences this has on their working and social behavior.

3.1 Agriculture in China

In China, land has been owned by the state since the Communist revolution of 1949.[3] The land redistribution to poor peasants that took place in the 1950s has created the current system dominated by small holdings (plots of lands cultivated by a household, by a corporation, by a cooperative, or by the government) and intensive agriculture, or rather, "intensive gardening" (Stover, 1974). The Second Agricultural Census carried out in 2007 showed that the total number of people registered in rural households was 799,673,000, with an average of 4.1 people per household, around 480 million of whom are farmers (*Second National Agricultural Census*, 2008). There were around 122 million hectares of agricultural land, and the majority of the holdings (193,445,894) were cultivated by households, whose average plot was 4.4 to 5.1 *mu* (one *mu* equals 0.08 hectare, six *mu* equal one acre), followed by cooperatives, the government, and corporations. And here is the first characteristic of Chinese agriculture: it is made up of millions of tiny plots farmed by many people.

China also has a long history of centralized agricultural policies, from price setting to subsidies to policies to regulate farming. In particular, because the fast economic growth of urban areas in the 1990s and early 2000s had led to a marked increase in the differences between urban and rural incomes. In 2002, the state started to provide direct subsidies to farmers growing wheat, maize, and rice to encourage steady production (Li, Wang, & Jia, 2011). A further series of policies that began in 2004 eliminated almost all agricultural taxes and fees, created subsidies for farmers, and established minimum procurement prices for major grains, including wheat and maize in order to protect farmers from the volatility of international markets (J. Huang, Yang, & Rozelle, 2010; Lu & Yu, 2011). In 2006 the State Council launched the New Socialist Countryside policy. Part of the government's 11th Five-year Economic Plan, this policy, or rather set of policies, focused on providing more support for agriculture and better development of public services in the countryside, in addition to subsidies for rural healthcare, and bonuses for local governments to preserve farmland, etc. (Fan, 2006). The combination of these policies dramatically changed life in the countryside. Mrs. Feng, a farmer in her mid-30s in Shandong A, describes the momentous change that 2006 represented for her and her family:

"When I was young, there was never enough to eat, because all we grew was used to pay the agricultural tax. We had to pay the tax in kind, so if one's harvest was 500 jin, 250 would have to be turned over to the government, and the rest would have to do to buy fertilizer, seeds, etc, as well as to pay for everyday life. People ate a lot of what they grew, because it was the cheapest way. Since the abolition of the tax, things are much better, because people can keep all they grow. Moreover, there are now subsidies from the government—this year it's CNY70 (slightly more than USD10) per mu regardless of what you grow. We have 8 mu, so we get CNY560 per year, which means money to spare to buy things like a computer, and things that are not crucial to survival. In the past three years, elementary school fees have also been abolished, so now school is really free, and that also is a big help."[4]

This quote illustrates well a second important characteristic of farming in China: the state, rather than the market or individual choice, is the source of the most important elements that impact farmers' lives, from taxation to prices to subsidies (Göbel, 2011).

A third characteristic of agriculture is that it is an activity mostly carried out by women. There is a debate on whether agriculture at a country-wide level is becoming feminized, due to male-driven migration (De Brauw, Li, Liu, Rozelle, & Zhang, 2008; Song & Vernooy, 2010), but in Shandong B, and in both Shandong A and in Hebei, which had a more balanced female/male ratio of residents, women dominated the daily running of the fields. Men help at seeding and harvest time, the most labor-intensive phases, but that is becoming less and less necessary, since most of the heavy work is now mechanized and even the poorest farmers can afford to rent one of the machines that come through the villages at harvest time and can harvest an average field in a few hours.[5]

A final characteristic is that the average age of farmers is increasing (Huang, 2012), which often means that farming serves as a combination of income generation and social security. Farmers, who do not have any kind of state pension, grow crops that can be both sold and eaten, and their main concern is predictability of income. If there are emergencies, it is easier to rely on remittances from migrant children or to find a casual job nearby, as Mr. Liu of Shandong B says:

"There isn't a big pressure to get a better income from the land, because almost everybody has income from work outside. I'd say for most families, half of the yearly income is from the land, half from other work... Also, my goal is not to grow my income or business; as long as things remain OK, that's all I need. The internet is useful for young people who want to improve and grow their business, not for old people like me. My children are all grown up and have good jobs, so I don't need much and don't have lots of worries. Until two years ago I also went out to work but now I don't. There's no need."

The Chinese countryside is characterized by multiple job holding and circular migration (Van der Ploeg & Ye, 2010), that is people holding jobs or migrating just for as long as it takes them to earn money to pay for unexpected or un-budgeted expenses—sometimes necessary, sometimes discretionary. Similarly, crops that farmers would otherwise keep might be sold in order to buy a 'luxury item' such as an electric bicycle, or to provide for anticipated or delayed expenditures that cannot be covered with regular income.[6] If this selling/buying behavior is seen as one discrete decision point, it often seems illogical, irrational, or irresponsible. Seen in a bigger context of life events and opportunities that reveal themselves over the course of a longer period, and that are shaped by past experiences and current conditions of both the individual and the community, they then appear not only as logical, but also as inev-

itable from the perspective of the life-trajectory of the individuals involved. In the next part, I will discuss some of the factors that shape these experiences: village life, information-sharing, and attitudes towards risk.

3.2 Farming as a Community of Practice

How does one become a farmer in rural China? And how is farming practice organized and sustained? The answers to these questions will help to understand environments where ICT should be incorporated, but fail to be so. Farming in the three villages is not family-based, but rather a community of practice, that is "a set of relations among persons, activity, and world, over time and in relation with other tangential and overlapping communities of practice. A community of practice is an intrinsic condition for the existence of knowledge, not least because it provides the interpretive support necessary for making sense of its heritage" (Lave & Wenger, 1991:98). In the contemporary Chinese rural context, the idea of 'community' carries a heavy historical legacy.[7] Farming was collectivized between the 1950s and the late 1970s, and when rules were relaxed, there was a significant blow-back against any idea of cooperation among farmers that was compulsory and imposed from the outside (Chan, Madsen, & Unger, 1992). And yet, the way people learn their practice, that is their skills and subsequent actions as individual farmers, is still strictly tied to the community. Both community and practice are key words: community is what forms around the practice and practice is what makes it sustainable (Duguid, 2005). As we will see below, this is a community that starts within the family, where children help their parents in the fields from a young age, but that then extends to the whole village, or at least to house and field neighbors in the case of bigger villages. Neighbors observe each other to decide when and how to do various agricultural tasks. When there are troubles or questions, the first people any farmer consults are those close by, in the village. In a practical sense, the three villages were a very good example of communities of practice with clear boundaries (the village) and focus (farming).

The majority of farmers in the areas I visited grew the same crops: wheat and corn, typically planted one after the other, peanuts, sweet potatoes, and some cotton.[8] Farmers learn how to farm through what Lave and Wenger describe as 'legitimate

FIGURE 1: **Ms. Long visiting the village for Spring Festival and reverting back to countryside work.**

peripheral participation,' that is by starting at the margins of the community with simple but real tasks, doing what more experienced farmers tell them to do, observing and imitating them. Young rural to urban migrants in their 20s, like my research participants, all grew up at a time when the farming community of practice was actively maintained.[9] Ms. Long, perhaps the most urbanized of my interviewees, mentioned while we were visiting her family in the winter that farmers started preparing the fields for sowing wheat in April, and then went on to list all the tasks that followed until harvesting in June. When I expressed my surprise at her knowledge of agricultural activities, she replied that when she was in elementary and middle school, all the children had to help in the fields, so she remembers the sequence of work very clearly. When she comes back to visit, four or five times a year, she still helps her mother in the fields. Ms. Yang, in Hebei, relates a similar experience: in the early 1990s, when she was in elementary school, the school closed during harvest times, since the teachers were farmers themselves, and the students had to help their parents. She remembers helping with small tasks, especially winnowing the wheat. In the villages during the summer it is very common to see children of all ages helping their mothers in the fields, even if they are full-time students for the rest of the year, or have already migrated away from the village and are only coming back for short visits. Young men are allocated land in the village, and when they migrate, as is common, it is usually tilled by their parents or relatives, or by their wives, who join the husbands' household upon marriage.[10]

Working alongside more expert farmers in the fields, watching them, imitating them, and following orders, constitutes the basis of learning the practice, and starts to legitimize the participation of the inexpert member in the community. Corrections happen in an implicit rather than explicit way, with the more expert farmer redoing the work that has been done by the novice without any verbal comment, as happened to Ms. Yang and myself when we were helping her mother harvest yellow lilies. Mrs. Yang often walked through the rows we had already harvested and picked up buds we had not seen or had left on the plant, without making any comment but showing us what were the characteristics of the buds we were supposed to pay attention to. As young farmers gain independence, they still take their cues on timing, sequence of jobs, quantities of fertilizer or pesticide, etc., from older farmers, until they can work independently. Learning to farm, in fact, is not a formal apprenticeship, as in traditional community of practice examples. This means that there is even less of a boundary between work and life, and also that there is no specific end to the process: farmers do become more independent with time, but the formality of ending the internship and becoming an 'independent farmer' who does not need to rely on other people's advice is often blurred, especially now that many young people try to avoid becoming farmers. People might start their learning process, then interrupt it, then go back to it when life circumstances require it—all without really being aware of the stages of the learning process, and without being sure themselves whether they're 'new-comers' or 'old-timers' (to borrow Lave and Wenger's definition) to the world of farming.

For example, in winter 2010, in Village A in Shandong there was a young man, distantly related to the Long family, who had just come back from the Northeast with his wife and two children. He had been there since graduating from middle school, but had recently lost his job. Since he was having difficulties finding a new one, he decided to go back to the village, and try his hand at being a farmer. He got back his land from his parents, and was leaning on Mr. Long and other farmers for help in his first season as full-time farmer. A year and a half later, in the summer

of 2011, he was still farming, was making enough money to support his family, and was much more independent than in the previous year. His trajectory runs counter to some literature that considers the process of urbanization of young Chinese irreversible because even if they wanted to go back to the countryside, they never learned to farm and couldn't make a living from it (Connelly, Roberts, & Zheng, 2011). If farming is seen as an isolated activity, that would undoubtedly be true: left to their own initiative and knowledge, neither Ms. Yang nor Ms. Long would be able to make all the decisions needed to make a living out of their fields. But if being a farmer is considered from the perspective of belonging to a 'community of practice,' then they would be able to start growing the most common crops right away and follow the lead of more experienced farmers to decide what to do and when. The most important point is that nobody in the villages had learned farming by studying it in a formal setting, and nobody teaches their children how to be farmers by giving them discrete information about it. Learning happens through practice in the fields. "The physical layout of a work setting is an important dimension of learning, since apprentices get a great deal from observing others and being observed." (Lave & Wenger, 1991:78). Here we have a first reason for the failing informatization of agriculture in the three villages: the salient features of its implementation (providing prices and websites that show farmers the how-to of farming) are based on a school model of learning, where specific units of learning (a price, a technique, etc) are taught by experts to learners. The model works in theory, and in fact some farmers mentioned tv programs for learning about farming and even praised their usefulness. However:

> *"For example, there are television programs on agriculture, and then there's a phone number that you can call to find out more information."* (Q: What program?) *"The Shandong Agricultural Channel. It is reliable, with good information. The programs are mostly of specialists from universities, and they have experimental fields, so you can look at what happens. They talk about seeds, about technology, about pesticides. Then there is a number that you can call if you want to find out more information."* (Q: Did you ever call?) *"I never called."* (Q: Did you ever do anything that you saw on tv?) *"I never did. But once I called a number that I saw advertised on the paper. It was a private company advertising grape seedlings, then I went and bought them, but it didn't work. These ads are often unreliable, because they just want to sell things."* Mr. Liu, Shandong B

In fact, it was not uncommon for farmers to praise the potential of the informatization program, but I never saw their words matched by their behavior. The Agricultural Channel was watched only when it showed entertainment programs like 'Miss Countryside', or various kinds of games set in rural areas. Computers were seen more as a symbol of potential economic development, than a tool to achieve it. In Village B, there was a seed store which prominently displayed a desktop computer. The owner and his wife had been migrant workers in Qingdao for several years, and there they had heard about a seed company that was opening franchise shops in the countryside. They decided to give it a try, and opened a shop back in his home village. For a fee to the franchising company, they received training, various materials, and the computer. If his farmer-clients had specific problems that he could not solve, he could ask a specialist at the headquarters of the company via video conference. He added that he could also look up things related to farming on the internet. On a later visit, when I asked him if he could show me how the video-conferencing worked, he said that he didn't have an internet connection, and so in fact had never used the system. On closer inspection, the computer didn't have a video camera either, but the shop owner said that he felt his clients would be impressed if they saw the computer in the shop.

The fact that farming is part of a communal, rather than individualistic, activity, means that the community shapes actions of the individuals that belong to it. Sometimes all the farmers have to perform the same actions at the same time because of external factors. For example, when it comes to harvesting wheat and maize, the machines that do the work arrive in the village at the same time, and everybody rents them over the same days and pays the same price. Selling decisions, as we will see in more detail below, are more independent, but are also influenced by when traders are coming through the village, what the weather forecast is, and what other farmers are doing in response to these events: Do they believe it is going to rain? Are they selling to the harvesters or the first traders who come through the village or do they think there is a chance that the price will increase? Sometimes a farmer will take the initiative (or have the right contacts) to negotiate the sales price of certain crops on behalf of the whole village, as happened in a village near Shandong A. Ms. Deng, whose parents are both farmers, said that the head of the village knew someone at a maize factory and negotiated directly with him, without going through intermediaries. She added that because there was a personal relationship, most farmers in the village believed that the price was better than what they could get from traders, so they went along with the deal negotiated by the head of the village. As Lave and Wenger put it, "Activities, tasks, functions, and understandings do not exist in isolation; they are part of a broader system of relations in which they have meaning. These systems of relations arise out of and are reproduced and developed within social communities, which are in part systems of relations among persons. The person is defined by as well as defines these relations." (Lave & Wenger, 1991:53).

Relations within a village are characterized by friction as much as by a certain willingness, or sometimes necessity, to cooperate and share risks. Experienced farmers, or 'old-timers' for Lave and Wenger, considered younger people as lacking the time in the fields that was necessary to become real experts; the few young people who were farming considered older people stuck in their ways and unwilling to change. In Village C, Mr. Xue was the only person I talked to who said he used the internet to read agricultural websites in order to find out about new techniques for farming. He was 32 years-old, and worked as a cook in the town, but had fields in the village which were cultivated by his parents and wife. He said that he often watched the agricultural channel on television, and one evening he told the neighbors, during the customary after dinner chat, about a new technique to grow sweet potatoes like tomatoes, e.g. hanging upside down instead of buried, which, he said, yielded more sweet potatoes than the traditional technique. The women all commented that he knew a lot of things about farming, but the older man in the group said that the technique was nonsense. His parents and wife farmed the exact same crops as everyone else, in the exact same way as everyone else.

As Lave and Wenger note, tensions between old-times and new-comers are typical of the process of social reproduction of communities of practice, and are a symptom of the conflict between status quo and change and their respective proponents. New farming techniques on websites, online commerce and market information, and prices over a mobile phone, all represent potential changes in the practice of the community, and are more likely to be taken up by the new-comers, the younger, less experienced farmers with less cachet among the members of the community of practice. Because of migration and other opportunities, there are many more old-timers than new-comers among farmers in the three villages, and, as noted by rural sociologists, they tend to keep their habits, and see ICT as irrelevant.[11] But

it is this tension between the old and the young, and between the tradition represented by farmers who do things 'as they have always been done' and those who experiment (who are not necessarily old and young, respectively) that creates a space for change within continuity and that prevents the community of practice from becoming a static, closed environment. It is a matter of balance between continuity that can lead to paralysis, and change that can lead to fragmentation. An innovation such as using ICT to be a farmer represents a major point of change in the practices of the community, and would probably create tension between those who use it and those who do not. However, in these three villages ICT has not (yet, perhaps) become in any way an instigator of change in practices, for two reasons. The first is that ICT and knowledge about what it is useful for, is brought to farmers mostly by their family members who are not involved directly in farming, and do not think of farming practices when they use the internet, so cannot pass on this knowledge to their families. The second is that, as I will argue in the next section, the way in which the community gathers and shares knowledge about farming and agriculture is more flexible and adaptable to the changing needs of the community than ICT and the systems they support can currently be.

3.2.1 Knowledge (and Information) Sharing

The existence, circulation, and sharing of knowledge, both explicit and implicit, is at the core of the maintenance and reproduction of a community of practice. In this section, I will discuss two ways knowledge is reproduced and shared in the villages: through casual but regular gatherings outdoors, and through encounters with 'experts' who come through the village throughout the year (agricultural extension workers, officials, traders, etc.)

During the winter, people visit each other at home, but as soon as the weather gets milder and work in the fields begins again, the prevailing mode of communal interaction is outdoor gatherings. In all three villages, these get-togethers take place on a road leading to the fields, or anyway over which people must often pass. There are always several such gatherings going on at the same time, and people join one or the other according to family allegiances, or gender, or life stage (young mothers with babies and toddlers, or old women). Sometimes they are impromptu gatherings occasioned by specific events. For example, in Village A in summer 2011, the Long family was restoring the house of their deceased grandparents, which was situated on the main road of the village. Throughout the day, people from the village stopped by to watch and comment on the work being carried out, and Mr. and Mrs. Long as well as the construction foreman exchanged at least a few words with everybody. In Village C, the fireworks for a neighbor's wedding attracted a group of people from outside that area to admire the spectacle and find out the latest about who was getting married, with whom, the wedding cost, etc. It is difficult to retrace with precision the 'rules' that governed these gatherings and who participated—my time in the villages was limited, my presence tended to disrupt the rules by attracting 'strangers,' and I was *de facto* excluded from the men-only gatherings. The gender division was quite clear, with women gathering with women and men with men, but there were several exceptions. Older men and husbands of core participants could join the women's gathering, while games of cards or mahjong could be more open to mixed-sex interactions, although typically of older people. Younger women, both married and unmarried, stayed with the women of their family. A core of people would always be at a certain place at certain times; others would come and go. The 'special events' were an occasion to overcome

FIGURE 2: **In Village A, a game of mahjong with men and women participating.**

familial or other allegiances, and allowed people who would normally not talk directly to each other or to certain groups to participate in the event and exchange the latest news. What was learned at the regular gatherings and at the special events was then discussed at home, or among relatives or closer friends.

In Village A there were no more than 50-60 residents left, by most villagers' reckoning. Since the village had only two roads that lead in and out of it, there were only a limited number of places where people could assemble, and it was difficult to reach any house without passing through one of the gatherings. Therefore people had more occasions to interact with everybody in the village, unless they had a specific reason to avoid their co-villagers.

Village C was informally divided into four areas. The one where the Yang family lived, at the north end of the village, was shared by people with their same last name and another last name. They all knew each other and were more or less closely related, so they tended to stay among themselves, to trust each other, and to not have many exchanges with the rest of the village. These ties were inescapable during daily life, as all the people in that neighborhood walked along one road to go to the fields, and they stopped for a quick chat several times during the day, and sometimes for longer periods at night. The familial ties were also rekindled more formally during special occasions such as weddings, funerals, or holidays like Spring Festival, when people visited each other according to a strict choreography dictated by the type and strength of relations that existed among them (Liu, 2000; Yan, 1996).

In Village B, the best gathering place was next to the paved road leading to the city, and it was monopolized by men. Women gathered in smaller groups in the internal roads of the village, but since I was not living with a family from the village, I was excluded from the men's gatherings, and never moved beyond being a novelty in the women's gatherings.

The conversations during these gatherings cover any topic in the life of the village, from discussions on who is going to or should marry whom, to children's schooling, to health issues

and healthcare, to television and technology. This is how many older people who do not have computers at home hear about the internet and what is possible to do with it. For example, one evening in Village C the conversation turned to the internet. Mrs. Li, in her late 30s, told her father-in-law about Happy Garden, an online game similar to Farmville, describing how one could steal virtual rabbits and vegetables and so improve

FIGURE 3: **The only road that led to the fields in this part of the village. People stopped in this spot several times a day, for a quick chat, to rest, and to see the comings and goings of the village.**

one's own farm. Mrs. Xue, 32 years-old, and a former migrant worker, helped Ms. Yang explain to the older people how online shopping worked. They both browsed frequently the website taobao.com, a sort of ebay.com, and Ms. Yang often bought clothes from it, both when she was in Bei*jing* and when she was in the village. Mrs. Li's mother-in-law asked how payments work, and whether it was secure. Mrs. Xue and Ms. Yang explained that that the buyer pays the money to the website, which doesn't release the money to the seller until the buyer has confirmed that she has received the goods and is satisfied. Mrs. Li's father-in-law then asked how online purchases can arrive to any home, and Ms. Yang explained that it was through the express mail, which is not delivered to the village but rather to an office in the nearby town, where she goes to pick up her packages. The old man asked her several times if she was sure, and if it really did work as she said, or if she was actually describing how she thought the system worked, and at the end still didn't seem convinced. Older people, on the other hand, are the ultimate authority in terms of history of the village and, if men, on politics and market issues.

What is important to note about these meetings is that orality dominates: conversations about the daily happenings are in fact intertwined with exchanges of information regarding farming and business - who is starting to water the fields, who is spraying pesticide, which trader stopped by. The essence of these conversations is not an explicit exchange of information related to farming, but rather a casual mentioning of various tidbits of information and news. These gatherings usually take place in the evening or during lulls in work in the fields, and they are, after all, just moments to relax and socialize. But orality rules all activities in the village, from household affairs, to doing business, to farming training.[12] The incessant

FIGURE 4: **Village B, playing cards, rigorously among men.**

'shop-floor,' talking that underpins much collective (and constant) knowledge creation and sharing that Orr noticed among photocopy machine technicians in the US (Duguid, 2006; Orr, 1996) finds a direct parallel among these farmers. Technicians' social gatherings were occasions where talk about work took place in an informal setting that promoted the almost imperceptible exchange of information—not included in training manuals—essential for effectively performing one's job. The social gatherings of farmers see occasional talk of prices, traders, other visitors to the village, and various and sundry topics that may or may not be of immediate interest or use. Someone mentions something, others inquire further, or simply make a mental note for future reference. Among my interviewees, only one farmer regularly read a weekly county paper; otherwise books, newspapers, and magazines were notably absent. The only places that sold books were shops in the county seat or the town, and the majority of these books were school texts. Most people can, at least to some extent, read and write, but neither is a widespread nor a favorite activity.[13] In the presence of plentiful oral alternatives, most farmers do not go to the written word to find answers regarding their farming. Ms. Cai, in Village C, has had a computer for a couple of years, and went online every day, but said:

"We don't need the computer for (agricultural information). The agricultural extension worker comes to the village for all that we need to know about farming."

Mrs. Yang, in the same village, was growing yellow lilies as a cash crop, an unusual activity which I will discuss in more detail below. She also relied on training and opportunity coming to her, rather than seeking them out:

"We heard about [the yellow lilies] *from a training from the government; the official came to the village and showed us."*

Mr. Ding, an older farmer in Shandong A, is also up-to-date with the latest types of fertilizer and pesticide:

"There is an agricultural extension worker, actually there is one in the county seat and one in the town, so we get the one from the town. He comes here to tell us about fertilizer, or pesticide and all that. So we don't need to find out this information, because he tells us."

While for Mr. Liu, in Shandong B:

> *"I know the prices of crops and all those agricultural news from television. Also, there is a government official who comes to the village and tells us, he is from the agricultural office in the town."*

In other words, in the village what prevails is information exchanges based on spoken language, or rather the bias of oral tradition, to borrow Innis's definition (Innis, 2008). Innis argued that different media (spoken language, or written language in different supports such as stone, clay, papyrus, parchment, and then paper and digital) have different inherent properties, which determine the attitude of a society towards space and time. Innis's thesis is deterministic and binary: a culture can be based on the oral or the written tradition, and when the latter starts expanding it will inevitably suppress the former. Much more nuanced views in this regard have been expressed in recent years (Carlson, Fagan, & Khanenko-Friesen, 2011) but what is still very relevant in his approach is the emphasis on the fact that understanding the bias of a communication medium is necessary to understand what is lost and what is gained when the medium itself declines in favor of a new one, which then gives rise to a new bias. Innis was particularly concerned with understanding oral cultures, which he saw as tradition-oriented and as emphasizing continuity and community over individualism and innovation. He did not see oral and written traditions as mutually exclusive, but rather recognized that the prevailing medium imposed its biases over the succumbing one.[14] Writing on paper and even more on electronic media highlights an "obsession with the immediate" and "was concerned with the destruction of time and continuity" (Innis, 2008:187-188). Dramatic overtones aside, the point is well reflected by the emphasis that agricultural websites and prices-over-mobile-phones services put on immediate market conditions and on the transmission of such data through the written word, in contrast with the farmers' behavior that is based on oral communication and on communal as well as individual considerations. There are two corollaries to this point. The first is that trustworthiness of information is a problem that the Chinese informatization system has not yet tackled—or rather, not yet in a manner that is compatible with long-standing village habits. In the villages, an oral system of 'checks and balances' has evolved to allow farmers to evaluate the information they get from different sources in a more general context, in order to decide its trustworthiness. For example, two farmers said that they knew—from other farmers and word-of-mouth—that their agricultural extension officer was getting money on the side from the company that made the seeds he was telling them to buy, but they thought that his advice on crop diseases was nevertheless valid. Knowing the agricultural extension worker in a more general context helped them make discrete decisions on his advice, making different decisions in different cases even though they were dealing with the same person. The second corollary is that factors that seem crucial in the short term might not be so in the long term. For example, in selling wheat and maize, farmers in all three villages agreed that price was not a real issue in deciding whether to sell or not. Everybody knew prices, but there wasn't a single source for them. Farmers found them out from other farmers, from the television, from traders, even apparently from the internet, and then kept on checking them, but the final decision was based on other factors such as convenience and risk, as much as on price:

"For wheat and maize there is the national price, but we get less money here; you get the full price only in the cities. So we get whatever the man who comes to buy the crop in the village gives us." (Q: If the price is better at another market, why don't you sell the crop there?) *"No, no, it's not convenient! That's what people with a lot of land do, but here we're just small farmers, we just sell what we grow and that's the convenient way."* Mr. Ding, Shandong A

"We sell to small traders. They come at harvest time and buy. They also have information about the prices, but every farmer decides on his own whether he wants to sell or not. It's different in different places, in some villages the village head also negotiates the price, because he might be connected with bigger and better companies and get a better price for everybody. In this village, it's every man on their own." Mr. Liu, Shandong B

According to some farmers, the price offered by traders was in general slightly higher than the national index, according to others, slightly lower. The reason for this difference could be because of quality issues, or simply a reflection of the fact that convenience trumped the extra income. Mr. Cui was a farmer in his mid-50s, living in Village A and working full-time in the fields that belonged to him and to his brother who lived elsewhere. He had the lean and wiry body of someone used to outdoor labor, an open and easy smile, and an unusually self-reflective attitude towards life and commerce in the countryside. He was particularly eloquent about the role that prices played in the decision-making of farmers such as himself:

(Q: How do you know the prices?) *"Everybody in the village knows them."* (Q: How? From television?) *"No, not from television."* (Q: From the internet?) *"No, people don't use the internet for that. There is a national index, but people don't look it up on the internet, because the prices on the national index are lower than what sellers actually offer, so there's no point in looking those up."* (Q: So how do people know prices?) *"Farmers just know, then sellers come and you ask and check what they say, then you go to the market and check again and decide where to sell. Every area has its own price, so the price you get in the county is different from what you get in the village."* (Q: How do you know which is higher and where to sell?) *"You can't know that, because it always changes. Let's say that you know the price in the county seat is high, so you go there to sell, but everyone else goes there and then the price is low, isn't it? But there's no point in finding out beforehand anyway. The fair in the village is only every so often, so if you decide to go you just go. Prices depend on many things* (he picks up a handful of corn)*; for example the quality: the buyer looks at the maize you have, and decides, this is good, this is not good, and then offers you a different price. You see, selling your crop is a bit like buying clothes. You might see something you like, but then you have to try it on, and see if it fits you—some things look good, but don't fit you, others do fit you. So when you sell, you look at the buyer, at the price, at what would be the difference if you sold for one cent more or less, and then you decide.* Mr. Cui, Shandong A

Mr. Cui's quote illustrates two points. The first is that the price is a fit between the farmer's priorities and the buyers' offer. Given the characteristics of local agriculture described above (older average age of farmers, alternative sources of income, small fields), one of the less visible facets of bargaining is convenience. The word 'convenience' (*fāngbiàn* 方便) was often used as a catch-all word, that could indicate that something was an easier, less complicated choice ('it's easier,' 'it's cheaper,' 'there's no point in going through the extra trouble'), or that the extra step was not worth the expenditure of money and effort ('even if I earned more money, it wouldn't be guaranteed money, so the risk is not worth it'), or that there were reasons behind certain behaviors that would be difficult or not appropriate to explain to a stranger. Sometimes the context and careful observation of interviewees' behavior made it clear which was the intended meaning of the word; sometimes not. What is important to note, however, is that whatever meaning people gave to 'convenience,' it was clearly something that played an important role in their behaviors and decisions, something that depend-

ed on various factors, and that was difficult to quantify. The second point that Mr. Cui and the other farmers quoted illustrate is that there isn't an explicit awareness of the process needed to find out about prices. Prices for wheat and maize were stable, so the previous year's price was a good starting point for the current year; and they were constantly discussed in the casual gatherings, so that they became almost unconsciously part of the shared knowledge of the village, rather than of the individual, to the point that people could rarely identify with precision how they had found out the going price for what they were growing. One evening at the end of June 2010, when wheat buyers were coming to the village every day, a farmer commented that a trader had offered CNY0.98 per *jin* (USD0.13). Ms. Yang, much more educated than her co-villagers but too removed from farming since she lived in Bei*jing* most of the time, tried to calculate what was the difference between selling an average-sized crop for CNY0.98 and CNY1 (USD0.13 – USD0.14), but all the people present already knew the answer: it was between CNY10 and 20 (USD1.4 and USD2.8), so not a big difference at all.

3.2.2 Risk in Farmers' Lives

If we understand farming as a community of practice where acts and decisions of single households are shaped by those of the community at large, we can see how the community as a whole influences, among other things, the attitude farmers take towards risk and diversification of crops. Mrs. Yang in Hebei and Mr. Cui in Shandong A are two interviewees who have tried to diversify their crops, with very different results. Mr. Cui tried to grow garlic and pepper in an area where he previously grew wheat and corn:

> *"Prices for the basic commodities (wheat and corn) are quite stable, that's why we all grow them."* (Q: Why don't you grow something that allows you to earn more money?) *"The problem with other crops is that they're not steady. This year the price of garlic is CNY5 per* jin*! (USD0.75 per jin) And I'm not growing any! I grew garlic four years ago, because they said I would make money. That year it sold for 2* mao *(CNY0.2) per* jin *(USD0.03) and I lost money. Red pepper is same thing: one year the price is high, the next it's nothing, and you lose money. Now I just grow wheat and corn; at least it's safe."*

Although the fluctuation in prices described by Mr. Cui is likely exaggerated, the point is clear: any fluctuation is seen as too risky compared to the predictability of grain prices. Mrs. Yang was the only farmer in her village in Hebei to grow an unusual cash crop, a type of yellow lilies (*jīnzhēn* 金针) used in Chinese medicine or as a special dish for weddings. She grew them in a field where she had also planted trees, and said that she started because

> *"It was an easy thing to do where we had trees, and they don't require much work... They're not very popular, so don't sell for all that much money, it's not a food that people eat every day."*

The economic situation of Mr. Cui and Mrs. Yang, the economic as well as social opportunities (or lack thereof) in their villages, their family situations and life stages, all influenced their decisions to try different crops, and to stick with them or not.

Mr. Cui had three children, all completely dependent on him: two were in middle school in the county seat, and one at university in Jinan, Shandong's capital. He had been a migrant worker in the past, but had come back to look after his children a few years earlier. He was getting old, and he had started looking after the land of his brother and parents, as well as his own, so he became a full-time farmer. Cash earned from the sale of crops was the only income of

the family. Until the children were grown and working, he felt he could not afford to take risks, both because of the potential loss of income, and because he simply did not have time to experiment with new crops and find a buyer for them.

For Mrs. Yang, the situation was very different. Her two children were both grown and had good jobs in Beijing. Her husband had built a small iron smelter in their courtyard when the children were in school and the family desperately needed extra-income. He started producing wheel parts for bigger companies in the town, an activity that had become common in the village in the mid-90s, and for which there was a local logistics chain already in place. Now that the children were grown, he was working much less, but in an emergency he could always pick up more work as a sub-contractor—it was an easier, faster, and more reliable way to get extra income than anything related to agriculture. Moreover, even though the harvesting of the lilies was relatively labor-intensive because the flowers must be picked by hand when they reach about 5cm in length and before they bloom, the work is over in three or four weeks. The harvesting takes a couple of hours every morning, before the flowers open, and is done by Mrs. Yang, her husband, her daughter if she's visiting from Beijing, and occasional neighbors or relatives who stop by to chat with Mrs. Yang and pitch in meanwhile – no outside help is required. The family had a small piece of land, around 0.7 *mu*, that was otherwise unutilized. Most importantly, Mrs. Yang had an uncle who sold produce wholesale at the city's market, so he could sell the lilies on their behalf without taking a percentage. Mr. Yang estimated that the yield was about 50-60 *jin* per day, or about 1,500 to 2,000 *jin* per season. In 2010, the wholesale price Mrs. Yang got was around CNY2.5 per *jin* (USD0.35), so the family was looking at getting between CNY3,750 and 5,000 (USD525 to USD700) in total. The price of lilies can change dramatically from year to year, but Mrs. Yang thought that the crop was still a worthwhile investment because it did not require much labor, she could sell it easily, and it was almost a bonus for the family. If it was a good crop and a good year price-wise, they would make money, if not, they would not lose much. The bulk of the family's fields still grew wheat and corn.

Whether or not to grow alternative crops had been an individual decision, and individual conditions had determined how much risk Mr. Cui and

FIGURE 5: **Mrs. Yang's field of yellow lilies.**

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Mrs. Yang were willing to take. However, for both farmers the absence of other households in their community growing the same unusual crops meant that they were alone in their experiments, and they could not count on other people helping them out with prices, with market forecast, with potential problems with the crop, or even on traders coming through the village to buy their crops. The 'infrastructure' necessary to make the challenge of growing a potentially lucrative crop a reasonable risk rather than a potentially devastating enterprise was entirely absent. For Mrs. Yang, the risk was worthwhile because she was not risking, literally, the food the family would eat the next year: it was a safe bet. For Mr. Cui, the risk could potentially be ruinous, and the disastrous experiment with garlic was enough to make him desist.

Other factors that make farmers reluctant to diversify their crops are the risk of theft, especially of crops that are difficult to grow, or that are selling at a premium. Before her experiment with yellow lilies, Mrs. Yang had tried to grow a kind of melon which was selling for a very good price. However,

> "They were always stolen by people who did not want to spend the money to buy them, so we just stopped and now we grow what everyone else grows."

The 'people' turned out to be co-villagers, and she decided that it wasn't worth her time to police the field or confront them about the thefts. Theft can be opportunistic or organized: one villager grew sunflowers, but did so in a small field protected by walls and a padlocked gate in the courtyard of what used to be the elementary school, so that nobody could steal them.

Finally, there are the usual risks associated with agriculture, that is how weather, parasites, and other plant diseases affect crops. These are the inevitable problems of farming, and it is easier to deal with them as a community rather than as individuals:

> "If there's a problem, you consult with neighbors, or try to fix it yourself, but usually it's not just one person's problem, it's common (...) If it is a really big problem, we see if it is on television. Otherwise we have to put up with it, there's no other way. For smaller issues, we just deal with them, ask the neighbors or the seed shop; they are more familiar with these things" Mr. Liu, Shandong B

The final decision and the implementation of advice is the responsibility of the individual, but there is always a sharing of the problem and possible solutions in the community, and if one has an unusual problem because of an unusual crop, then she will be on her own. Growing the same crops is a way of distributing risk, and of having access to shared solutions.

Moreover, simple factors like weather forecasts can trigger the sale of crops even if the price is not the best that can be gotten. When I visited the Hebei village at the end of June 2010, wheat had just been harvested and was scattered on any dry, paved surface to dry. One morning, the first wheat buyer of the season came through the village on his truck, announcing his arrival through loud speakers. He stopped at the corner of the village where people met during their downtime, and slowly people started to gather around the truck. There was general conversation, but nothing about buying or prices. Finally, Mrs. Yang's mother-in-law, the oldest woman at the gathering, asked in a conversational tone how much he was offering for the wheat. The buyer replied CNY 0.97 per *jin* (USD0.14). There was a general murmur of discontent, as the price was deemed too low, but he replied that he was selling to a bigger

company, and he just made a profit of a few cents per *jin*. Nobody made the move to sell, nor started bargaining. He did not increase the price, so after about ten minutes he left. Mrs. Yang's daughter commented that he was just the first buyer to come through the village, so everybody waited to see what other buyers offered before they committed. A few days later, Mrs. Yang sold the crop at the same price as the first buyer offered, CNY0.97 per *jin*, making a total of CNY2,250 (USD315). After hearing other buyers all offering the same price, Mrs. Yang decided to sell, as she calculated that the difference between someone offering CNY0.97 then and 0.98 later was not significant and not worth it because if it rained the wheat would get moist and she would get a lower price for it, or risked having it rot. Indeed, the day after she sold the wheat, it rained.

The biggest priority for the farmers was to have a certain degree of predictability rather than maximizing their earning potential, especially if the land was their only source of income. They also sought a certain degree of convenience, especially when they could easily find other, possibly less fatiguing and certainly less irregular, ways to earn money. They were aware of the limitations of small plots, and of the potential for cooperative, bigger fields, and ICT. However, as Mr. Liu explained:

> *"The internet and computers are for young, ambitious people. I have enough, I don't need to go through the trouble to get more."*

Ms. Yang, who went back to her village from Bei*jing* every few weeks, noticed that compared to the past

> *"Farming is a relaxed affair nowadays, between the small size of the plots and the mechanization, everybody can have other small activities. The guy living in the house at the back of ours is a cab driver, another neighbor comes to collect trash and bring it to the city. Two farmers have sheep, a number of people have small smelters; there are a couple of people who used to work in construction when they were migrant workers, and now that they don't go out anymore they work on local construction projects in the village when they feel like it."*

Most farmers, because of their age and/or general financial situation, showed a conservative attitude towards risk that was shaped by external factors (weather conditions, quality of crop), community behavior (is any other farmer selling or are they all waiting?), and individual circumstances (tolerance for risk, immediate need for cash). The combination of these factors can provoke decisions to sell at moments even when economically it is not convenient. 'More information' on the most up-to-date prices and market conditions is all about the current situation and does not deal with future risks: the price of garlic might be very high today, but what about next year? It is not surprising then that by far the most successful use of mobile phones in farming has been the weather forecast report delivered by SMS every day. The subscription costs about CNY3 per month (USD0.42), and many farmers subscribed to it, even those who had a hard time reading the screen or finding the message itself. The forecast helps decrease short-term uncertainty, and augments existing sources. As, again, Mr. Liu summarizes:

> *"First I watch the national weather report on television; then I watch the local one; then I compare them with the weather forecast I get on my mobile. Then I analyze this information and come up with my forecast, and it's 70% reliable"*

In this case, "Participation involving technology is especially significant because the artifacts used within a cultural practice carry a substantial portion of that practice's heritage... Thus, understanding the technology of practice is more than learning to use tools; it is a way to connect with the history of the practice and to participate more directly in its cultural life" (Lave & Wenger, 1991:101). It is also worth noting that subscribing to the weather forecast via SMS is very common among urban dwellers, and it is likely that many returned migrants have shared this habit with their family. Or they could have picked it up during one of the many campaigns carried out by China Telecom, where people received free SMS about the weather or the news for a trial period, and were then asked to subscribe.

For the farmers of the three villages, the weather report through SMS fits the way they put together their general weather forecast (the practice's heritage). They were already used to receiving weather forecasts from different ICT sources (television, radio, occasionally newspapers). The format of the SMS matches the format of the other forecasts, with its being precise but not too technical, and has a clear element of 'recognizability' that makes the new practice accessible even to older, less educated people.

4. Conclusion

Farmers learn farming as part of a community of practice, where young people learn alongside the more expert participants in their families and in the rest of the village. Orality constitutes the bias of communication of the village, from casual or topical conversations among villagers on prices, problems, timing, and techniques, to information delivered in person by agricultural extension workers, traders, etc. Knowledge is formed, interpreted and passed on as a collective effort, not an individualistic one. This is the real meaning of the "Everybody knows" answer that I kept on receiving when I asked farmers how they happened to know the price of crops. "Everybody knows" means that an individual might get the specific information she needs from a specific source: in June 2010, Mrs. Yang knew the going price of wheat from her neighbor, who said she had heard it from another co-villager who apparently had looked it up on the internet. That price was then constantly checked and confirmed by other villagers in casual conversations during evening gatherings, by all the traders who came to buy the wheat, by acquaintances at the market, by newspaper reports relayed by the head of the village, etc. The community plays a fundamental part in the construction of the 'going price,' which then became "slightly higher than the national index" in Village C and "the traders never offer you as much as the national index" in Village A. It becomes the external validator of individual knowledge, so much so that it is hard to distinguish where one ends and the other begins. The community is also a source of distributed knowledge about farming in general, as well as a source of shared solutions to problems, and therefore a way to lessen risk for individual farmers. The informatization of the countryside, on the other hand, looks at ICT use for farming as one individual seeking one information point: Mr. Cui looking for the price of garlic, Mrs. Yang looking for tips for growing yellow lilies. ICT based around individual use do not fit the ingrained patterns of the community when it comes to farming.

The fact that farming is a community of practice where people share risk and, sometimes, expertise, does not imply that people are particularly prone to sharing ICT devices and/or knowledge. On the contrary, personal, individual property is very much valued and very much

defended, as shown in the previous chapter where people distinguished clearly who was the owner of the computer or the mobile phone in the rare cases of shared use. It is rather the manner of usage that does not fit the model implicitly suggested by informatization efforts: the individual in front of her screen, looking up information. Farmers do compete against each other, and do not shy away when they have a chance to sell at a higher price than a neighbor. However, for many farmers these individual successes cannot come at the cost of isolation from the community. Conversely, the way farmers learn how to use ICT, and what they learn to use them for, does not fit the way they farm. ICT is brought in by family members, who show farmers how to play cards, to communicate with their grandchildren, or to watch tv. ICT is about leisure and communication, it is not about farming and information about markets.

Writing about documents, their forms and their changes through time, Brown and Duguid remark that "Changes in technology make it clear that we can no longer take for granted a correspondence between social purpose and technological resources." (Brown & Duguid, 1996). The current nature of Chinese agriculture is a good example of this mismatch, as the demographics of rural areas and the distributed way in which farmers build and share knowledge within the community create a continuum that is not easily modified nor modifiable by a stand-alone element like a mobile phone, or a price point, or the potential opening of a new market. Technology in general is playing a key role in the modernization of Chinese agriculture, and in fact some scholars credit technological improvements and investments for most of the increases in productivity since 1985 - but just not information technology (J. Huang & Rozelle, 2009). Moreover, the grain market liberalization that has effectively taken place alongside the minimum procurement price imposed by the government has expanded the freedom of farmers in deciding what to grow (Alpermann, 2011; Pan, Malaga, He, & Mohanty, 2007). The sector is not static, and bigger scale operations will undoubtedly become more common. In the three villages, there were several farmers taking care of plots belonging to migrant relatives; other migrants leased their land to commercial farms. These bigger farms tend to be professional entities, often with professional agronomists on staff who do use computers and ICT for farming purposes. I visited one such farm near Village B, and it was a well-run commercial operation that leveraged economies of scale and that employed a full-time director of operations with a university degree in agronomy. She did use the computer to organize work, and the internet to look up issues she might have with crops, although interestingly she said that she would try queries on a regular search engine rather than look up specialized websites. The informatization policies are geared also, or perhaps mostly, towards this kind of user and the government has on several occasions expressed the goal to transform the countryside toward this more efficient model.

However, there are still millions of smallhold farmers like Mr. Liu, Mrs. Yang, Mrs. Feng and Mr. Cui, for whom farming is a part of life in a different way than farming as a business: it is a source of food and of spare cash, of subsidies that provide money for unbudgeted expenses. Farming is also an important part of their identity and social lives, and many farmers worried about losing their land and houses to advancing urbanization and to policies intended to 'rationalize' the countryside (Hsing, 2010; Long, Li, Liu, Woods, & Zou, 2012). It is also a safety net for the people who are left in the countryside and do not have a pension or other sources of income, and also for migrant workers who take risks in urban areas, but wish to have a place to go back to if things fail. For all these farmers, informatization of the country-

side means bringing their mobile phones to the fields to listen to the radio while working, or in case their children call. Checking prices or market conditions, given the constraints, habits, and structural organization of agriculture in the village described above, is for now simply irrelevant.

Endnotes

1. Soriano, who used mixed methods, is one of the few authors to acknowledge that surveys might not give a reliable picture of what farmers do and/or are after: "A survey was initially conducted to obtain the household's socio-economic profiles, livelihoods, and villagers' perception on the telecenter's role in enhancing their livelihoods. However, after an initial survey, it was deemed that this methodology alone poses limitations as results did not reflect the community's livelihood strategies and provided only limited understanding of issues hindering the full adoption of technology/information and optimal benefit from telecenter interventions. Due to the abstractness of the concept of information to the respondents, vague and non-responses to surveys posed more questions that later also necessitated the conduct of interviews and FGDs for clarification. It was through extended and informal interviews with the telecenter staff and farmers/family members and focused group discussions that more honest assessments and interesting findings surfaced." (Soriano, 2007).

2. Both Xia and Liu highlight how vague the goals of the rural informatization plans are, especially compared to the preceding policies for the extension of telephone lines and television and radio coverage to the countryside. Liu finds that even though the term 'informatization of the countryside' has appeared in every yearly Central Committee of the Chinese Communist Party and State Council No. 1 Document, which lays the policy goals and priority for the year, there are no official definitions of the term, and Chinese scholars have identified several typologies of rural informatization programs (See Xu and Zhu, cited by Liu, and Qiang 2009). The fact that the implementation of the central policy is left to provincial and other local authorities makes it even harder to find a clear-cut definition of exatly what informatization means, although existing analyses of local projects and policies show that the common thread among them all is the increase of ICT and ICT access, as well as the creation of websites and services specifically geared at bringing 'more' agricultural information to farmers.

3. Before 1949, private ownership of land was common, and personal wealth came mostly from the amount of land one owned, while the majority of peasants were tenants (Ding, 2003). As soon as the People's Republic of China was founded in 1949, the Communist Party launched a country-wide land reform to reduce social inequality and provide economic security to peasants, who had been an important factor in its victory. By 1956, 92% of peasant households were part of "agricultural production cooperatives" (APC, with 30+ households) but shares were distributed according to the land each household brought into the APC. This was followed by the creation of even larger scale cooperatives, which rich peasants joined out of self-protection. These were more truly socialistic, with distribution of benefits based on work done rather than on previous holdings, although many places maintained small private plots that families could cultivate for their own benefit. The first part of the 1950s was a time of centralization of political and economic decisions, and the local rural leaders that had emerged from the initial wave of reforms limited themselves to carrying out the decisions that came from the center. The centralized approach allowed an extensive process of land redistribution that would not have been possible if the initiative had been left to local governments. In subsequent years, however, especially after the Great Leap Forward disaster (1958-1961) and subsequent famine and catastrophic fall in production, a certain amount of decentralization became necessary to guarantee more responsive policies toward production. After Mao's death in 1976, the first economic reforms began in the countryside, with decollectivization of village land, and the return to a household responsibility system (HRS). 1986 was a pivotal year in terms of land reforms: following the success of agricultural reorganization, which translated into both increased production and increased productivity, the State Council issued a Land Law that decreed that ownership of farmland resided with the rural collectives, thereby formalizing what

was the de facto situation in most of the countryside. The 1982 Constitution stated that natural resources are owned by the state, unless defined by the land as collectively owned. In general, urban law is state-owned, whereas suburban and rural land (including private plots) is collectively owned, as the 1986 Land Law specifies (Ho, 2001).

4. One *jin* equals 500 grams.

5. The three villages were similar in that most of the day-to-day farming work was left to women, as mentioned (mostly by women!) in interviews and confirmed by observations in the fields at any given time, or by sitting along roads leading to the fields and looking at who was coming and going from fieldwork. There were men involved in the daily farming, but they tended to be older men who did not work outside any longer. When there were younger men who had not migrated, they typically had jobs—sometimes temporary, sometimes more long-term—near the village, and helped out with farming if and when needed.

6. From an industrial (and post-industrial) perspective of wage labor, characterized by more or less predictable incomes, and the medium-to-long term financial outlook enabled by a combination of regular wages and a more or less developed system of social security, it can be difficult to understand the constant invention of what could be sources of income, and the complex balancing of immediate needs and longer term planning that takes place in the Chinese countryside. Rural residents work in what is often an informal economy, where wages, when they exist, are uncertain (sometimes paid months after they are due, sometimes not paid at all, sometimes less than agreed), where state welfare and social security are almost non-existent, and protection against catastrophic events (for example, the loss of a crop) is rare and dependent on the goodwill of local officials. Such circumstances require a creative approach to financial planning. For example, when I first visited the traditional compound of Ms. Yang's family in Hebei in 2010, the courtyard was adorned by two grown gingko trees. Ms. Yang's grandmother told me that several traders who had been scouting the countryside to find grown trees to transplant in the innumerable luxury compounds that were being built in Beijing had stopped by and offered serious money to buy the trees (Ms. Yang's grandmother said CNY15,000, but Ms. Yang said she exaggerated). The family thought that the money was good, but wasn't interested in selling, since the trees had been there for a long time, and they provided much needed shade in the summer. The following summer the trees were gone: Mrs. Yang had sold them for more than CNY9,000 (USD1,260), a sum equal to more or less the yearly income for a rural resident, according to official statistics. When I asked why she changed her mind, she said that her son was going to get married, and the family needed money to finish restoring the house, where the wedding would take place. In fact, the two gingko trees were gone and three new rooms had replaced an old storage space and a bare, cement-floored enclosure.

7. For a detailed description of the collectivization of agriculture and its consequences, see (Chan, Madsen, & Unger, 1992; Unger, 2002).

8. This is aligned with province-wide statistics on crops, although there is more variety in other districts. Shandong is renowned for its apples, grapes, and cherries, as well as its vegetables, but these tend to be cultivated by bigger commercial entities and to be more integrated in wider markets (Vassilos, Sanchez, & Beckman, 2008).

9. Children growing up in the countryside now might not be exposed to this practice, because there is more of a sense that they will have more possibilities and that their future will not be in the countryside—in effect, a decision by their parents to disengage from the reproduction of the community of practice they belong to. However, considering the number of young children 'left behind' to the care of their farmer grandparents while their parents work in cities (Fan, 2009), it is possible that the community is still being actively kept alive.

10. The issue of land allocation is very complex. At the beginning of the household responsibility system (HRS), the central government had established that land allocations had to be based on household size and/or household labor supply (Brandt, Huang, Li, & Rozelle, 2002), and had to remain in place for 15 years before reallocations could be made. In reality, small reallocations—or rather, readjustments of land plots according to changes in the situation of the household, such as births, deaths, women marrying into and out of the localities, land left uncultivated, etc.—began soon after the HRS was implemented, and continue to this day. The three villages all had different situations: in Shandong B, land has not been reallocated since 2002, so young people 'inherit' the plots of their parents or they can lease the land of families who have left, but do not have their own land. In Shandong A, there were small reallocations from time to time. In Hebei the last reallocation apparently happened in the late 90s, and fields have been left untouched since. In summer 2011, the Yang family's neighbor's daughter got married and, unusually, her husband joined the family instead of her joining his family. He was going to be a farmer, at least in the early days, and he was going to take over his father-in-law's fields.

11. See the latest edition of Everett Rogers' classic *Diffusion of Innovations*, in particular chapter I and IV that touch upon innovation and stagnation in agriculture (Rogers, 2003).

12. In fact, there are still loud-speakers installed in all three villages, and in Village B and C they are used to call people to come to meetings, to pay their bills, to fetch the post, or for general announcements. In Village A they have not been in use for a while, since the village is so small and currently without a head official.

13. Some research suggests that in Chinese, unlike in alphabetic languages, the ability to read depends on writing rather than on listening (Tan, Spinks, Eden, Perfetti, & Siok, 2005). Many older people have an elementary school level education, and almost stopped writing altogether as soon as they stopped going to school. The lack of writing practice might explain the reluctance to read that many manifested.

14. The idea of a prevailing bias has been taken to mean that oral and written biases are opposite and cannot coexist, in particular by Walter Ong in his *Orality and Literacy: The Technologizing of the World* (1982). For Ong, writing "restructured thought" and "Fully literate persons can only with great difficulty imagine what a primary oral culture is about." (Ong, 1982:31). Recent scholarship has rightly re-evaluated the role that oral and written culture play in contemporary societies—see Carlson 2011 for a discussion of the historical debate as well as recent scholarship in understanding how orality and literacy are intertwined rather than opposed (Carlson, Fagan, & Khanenko-Friesen, 2011).

6 ICT and the Meaning of Development

"Developed countries are developed because of technology. China, especially in the countryside, is still a developing country, therefore it needs technology to develop."

Mr. Cui, Village A in Shandong

"If there has been one constant in China since the middle of the 19th century, it is that imperial reformers, early Republicans, Guomindang party cadres, and Chinese communists have all prioritized science and technology."

(Elman, 2005:xxxi)

1. Introduction

Mrs. Shan is a decisive, no-nonsense woman in her early 40s, who is running her own business—a kindergarten/elementary school with about 300 students and eight teachers—near Village C. In her 20s, she studied accounting at a university in a nearby city, worked at different urban jobs, got married, had a child, and finally achieved what many rural residents dream of: an urban *hùkǒu* (户口), the residence permit that gave her access to the slightly better welfare and educational system that urban areas provide to their residents, and which are inaccessible to rural residents. But once her child was in school, she decided to come back to the countryside and set up a business that would help "raise the quality" of rural people. She saw education and technology as the only ways to overcome what she considered a terminal "ignorance and lack of ambition" of rural parents:

"To improve the quality (of a rural child) you can't rely on his parents, (you have to) let him see the world, let him leave the countryside, see how the outside world is, go find a job outside, so he can expand his way of thinking, not just be a frog in a well...[1] Now I worry that the low quality of the parents also becomes the low quality of the children (...)

I want to raise the quality of families, the quality of children here in the countryside, this is really my concern. Computers are good, but not computer games. For example from Monday to Friday I don't allow children to play video games, and if I find them playing, then I might hit them (laughs). I'm like that, because their parents teach them to play video games, but they don't do it on purpose, so I tell the kids, when your father plays video games, you just don't pay attention, you tell him, I have to do my homework. That's what I teach them, don't pay attention to your own family (...) You need to have a taste for a better quality of life! (...) I try to broaden their views, their thinking, give them a taste for the world and for knowing what the world is."

In the course of our conversations, Mrs. Shan constantly referred to the importance of "using computers like urban people" and to "improve one's 'quality'" and, conversely, to the inappropriateness of using ICT for entertainment. This was the foundation of her teaching philosophy, which was echoed by several other interviewees who were parents of school-age children: the computer was an essential tool to gain respectability (or, as one interviewee put it, to "not lose face") in front of urban residents and to assert one's belonging to a better class of people.[2]

The role that objects can have in defining and displaying one's social position has long been a trope of sociology (Bourdieu, 1984; Goffman, 1951), and ICT devices are no exception. Their peculiarity is that they play a double function as objects and as media, and one of the most ambitious aspects of domestication theory is its attempt to grapple with precisely this 'double articulation.' In his 1992 introduction to domestication theory, Silverstone defines 'double articulation' as "the ways in which information and communication technologies, uniquely, are the means (the media) whereby public and private meanings are mutually negotiated; as well as being the products themselves, through consumption, of such negotiations of meaning." (Silverstone, Hirsch, & Morley, 1992:28).[3] In other words, the creation of meaning in/through ICT happens at two interdependent levels: the first is the "meaning of the commodity as object," and the second is represented by the "text and communications of the technologies" (Silverstone & Haddon, 1996:62).

Domestication theory and the definition of double articulation began before the Internet, and content is generally treated as something that is consumed rather than produced by users: Silverstone talks about the negotiation between private and public arenas that happens through the individual choice of programs and broadcast schedules of television and radio, but this choice is all the agency that users have.[4] However, the concept of double articulation is particularly apt for describing the properties of ICT such as computers and mobile phones, and their significance in linking households and individuals—what Silverstone calls "private cultures"—to public cultures and the world at large.

In Chapter Four, I briefly discussed the importance of ICT objects as symbols of modernity for many of my rural interviewees, such as the seed seller in Village B with his computer that was in theory connected to the seed company headquarters, and even if in practice the connection did not work, it served to give him prestige in front of his customers. But what begins as a desire to own a mobile phone or a computer because of the object itself and the kind of aspirations it embodies can then become an awareness of the existence of a world outside one's experience, and a desire to seek and engage with specific types of content. In this chapter, I explore more in depth the role that ICT play as symbols of socio-economic success for migrant workers and rural residents within the context of the public discourse on development and class. I do this by analyzing how these people talk about ICT objects and by looking at some of the content that they seek and/or create. I show that this is partly the legacy of the specific historical encounter between China and Western technology that put technology at the center of the reformists program to restore the prestige that China had lost in the final years of the Qing dynasty (mid-to-late 19th century), and partly the result of the public discourse around the low "quality" (*sùzhì* 素质) of rural residents, and the need to improve it, that emerged in the early 80s. I argue that both the public discourse on quality and the idea

that ICT can be a tool not only of self-improvement but also of social ascent has been internalized by rural residents, who enact strategies to conform to these ideas, but also to break loose from them.

2. Migrant Workers and ICT

As I described in Chapter Three, when she first arrived in Beijing Ms. Long could not afford to buy a regular mobile phone: at the time, the devices available on the market were mostly foreign-brand phones, which were simply too expensive for someone like her, who had to send much of the money she earned back home. She settled for a *Little Smart* (*xiǎolíngtōng* 小灵通*)*, which looks similar to a mobile phone, but with limited range and roaming capacity. More importantly, however, *Little Smart* phones were known as 'poor man's phones' and associated mostly with migrant workers and that segment of the population that Qiu calls the "have-less"—unemployed, retired people, students, and people with limited income in general (Cartier, Castells, & Qiu, 2005; Qiu, 2007, 2009). Qiu rightly argues that these relatively inexpensive devices allowed people who could not have afforded regular mobile phones some of the convenience provided by mobile technologies. However, the fact that a *Little Smart* was recognizably not a mobile phone was a great source of frustration for Ms. Long, who felt like it made her stand out as a rural woman at a time when she was doing her best to blend in and become like her urban peers. In addition to saving money to purchase a proper, foreign-brand mobile phone as soon as possible, Ms. Long started to observe very keenly and imitate urban (and foreign) women, in order to "improve her quality," as she often commented, and pass for a Beijinger.

The goal to "improve one's quality" (*tígāo sùzhì* 提高素质) was a common one among the migrant women and men I interviewed in Beijing, and was very much supported—when not actually imposed—by their employers. Ms. Long recalls how she and her colleagues received a weekly email from her supervisor with a sentence in English to learn by heart, because, the supervisor said they should learn English to better themselves, and at the same time "improve their attitudes", and realize that the computer could be used for something useful besides listening to music and watching videos. The lesson did not work in practice: since the supervisor was the only person using email to communicate with these women (who preferred instant messaging and mobile phones to keep in touch with family and friends), they then stopped checking their email, and told him that they were not using computers at all. But the episode was a clear reminder that they were people of 'low quality' and in need of self-development, a concept that was constantly reinforced—by their supervisor, by urban customers in the shop where they worked or by urban students for those who worked at the university, and by television—and well internalized and replicated by the women themselves.

Both the men and the women I interviewed in Beijing talked about their villages as 'low quality' places dominated by boredom, dirtiness, lack of proper facilities like running water, and pollution. Ms. Wu, from a village next to a coal mine in Shaanxi, always wore white in Beijing: it was the color that she could never wear at home, because the pollution in her village would immediately turn white clothing grey. How could she miss a place like that, she asked, that was so backward and without any hope of development? This perceived low quality of rural villages also applied to their inhabitants, whom most interviewees discussed as backward

people. They contrasted their experience and attempts to "see the world," learn new skills, and improve their lives with that of people who had remained in the countryside, and described how much progress they had made. Still, in the eyes of urban residents, these women mostly remained backward, rural people. Ms. Long and Ms. Xie, both working in a university, were particularly sensitive to the fact that they were often treated as 'low quality' people by the students, because of their jobs and their rural origins. Ms. Xie, who worked as a cashier in one of the university supermarkets, summarizes very clearly this frustration:

> *"These students, they are all from a privileged background, their parents have businesses or connections... they are just not used to hard work (chīkǔ* 吃苦, *lit. to eat bitterness) like us, they feel that everything is owed to them, and don't think twice about breaking the rules and leaving me and my colleagues in trouble... Nobody cares about regular people like me, it's just people with money and high quality (sùzhì gāo* 素质高*) who matter."*

The way *sùzhì* (素质) is usually translated—quality—does not fully convey the aspects of class, status, education, and moral endowment of the Chinese concept. The word emerged in the early 80s, when a combination of the nascent capitalism that followed Deng Xiaoping's reforms and the so-called 'One Child' policy instituted to control the population growth gave rise to a public debate centered around the quality of the Chinese population and the need to improve it in order to be competitive with the rest of the world. Sigley describes the several meanings that the word supports:

> *"Collectively, suzhi refers to the "quality" of a population (e.g., that of the nation) or subpopulation (e.g., that of a social class or ethnic group). Individually, it points to the "quality" of an individual human being (thereby enabling a means of comparing individuals and groups). In all cases, suzhi refers to a combination of material and ethical substances that it is claimed can be known, calculated, and, in most cases, improved (...) In its most extreme form suzhi functions as a measure of human value which, through a commoditization and dehumanization of the body, constructs a hierarchy of worthiness and utility (of "low" and "high" quality, for instance). Most alarmingly of all, it also finds its way into brutal determinations of what constitutes "non-value" (or "nonhuman"), thereby contributing to the articulation in the Chinese context of a concept of "life devoid of value."* (Sigley, 2009:538-539)

He continues to argue that the emergence of such a public discourse embodies a specifically Chinese anxiety about modernity: the belief that the country's development (compared to Western countries) has been stunted by the quality of her people, and that only an improvement in their quality will allow China to become modern and once again powerful. Anagnost expands on more recent uses of the term, and argues that it is connected to the growth of the middle class that followed the economic reforms, where high *suzhi* was identified with middle class consumption practices and social mobility. To address the increasing gap between those who can make the transition to middle class and those who are left behind, the government instituted a series of projects to eliminate poverty in rural areas such as the one described in the previous section, with the explicit goal of developing the economy of these areas, and raising the *suzhi* of rural people (Anagnost, 2008)—swiftly shifting the burden of being left out of the country's economic growth onto the peasants who are unable to improve their own quality. The city and its dwellers improve their quality and become modern; they measure their own progress against the lack of progress and the low quality of the countryside and its backward inhabitants, as Ms. Liu, who was born in Village B but went to university in Beijing and now lives there, eloquently describes:

"In China everybody reckons that cities are better than the countryside, because now China's situation is such that a lot of resources are poured into cities, especially big ones, so everybody likes to go to big cities, they don't like staying to the countryside, especially young kids (...) The impact of the informatization program, I can give you an example, more rural children will be able to put more of an effort into studying, (through the Internet) they can get a feeling for the atmosphere of the big city (...) I want to go back to the village and tell them about Beijing's development, and the living conditions of urban people, I think that should inspire them."

Tales of urban life should inspire school children to do something to achieve it; as in the public discourse about *suzhi*, they are portrayed as the ones who can be turned into Chinese citizens of higher quality by education (Murphy, 2004). Another category of people singled out as needing quality improvement are rural women. The All China Women's Federation lists raising women's quality as one of its key goals (Jacka, 2009:523); migrant women working as domestic help in urban areas are marketed according to the *suzhi* that is commonly associated with their region of origin (Sun, 2013); and migrant women are constantly urged to improve their education, their appearance, their way of speaking (Jacka, 2006).

The rural women I interviewed in Beijing were all very aware of the dominant *suzhi* discourse, and alternated between being frustrated and proclaiming their equality with urban residents, and accepting it, remarking that they should make an effort to improve themselves. They also enacted their own strategies to find their own path to higher quality, or anyway to better fit into the urban environment. The first changes adopted would often have to do with appearance: by carefully observing and imitating the way urban women dressed, wore their hair, and used make-up, they changed their appearance to the extent that I had trouble recognizing two of them on one of my follow-up trips. Wearing fashionable clothes made them harder to identify at first sight as migrants, but the transformation did not stop there. A few of them embraced what they considered city-dwellers' habits: Ms. Long, who in 2007 used to go to the local park to participate to the group dances—a popular form of entertainment, but not among young and upwardly mobile urbanites—by 2009 belonged to a gym, where she went to run and attend yoga classes. Ms. Wu had taken up yoga already in 2007, after hearing about it from her clients, many of whom were foreigners. In 2009, she had moved on from yoga and was running in a nearby park on a daily basis.

ICT are important signifiers of *suzhi*—the devices one owns; the modality of Internet access, whether in Internet cafes, now eschewed by urban youth, or in private clubs; the kind of content sought—all served to identify the user as either urban or rural, upwardly mobile or a second-class citizen. At the same time, migrant workers can and do use ICT to try to define themselves as belonging to the urban middle class since it is a class that is still more defined by its consumption patterns than simply by its income (Li, 2004), and to construct their new urban identities by borrowing from a variety of models and from what Appadurai called 'mediascapes,' characterized by fluid and irregular shapes, and providing "large and complex repertoires of images, narratives and ethnoscapes to viewers throughout the world, in which the world of commodities and the world of news and politics are profoundly mixed." (Appadurai, 1990:9). ICT ownership and use become a way to overcome a low *suzhi* by showing visibly that one belongs to a better class of people, through, for example, the purchase of a 'good brand' phone, but also by living a different, aspirational life on social networks. This is not a behavior that is limited to migrant workers: having a brand-name, fashionable phone is the goal of many urban residents of all ages. But for urbanites of the same age as the migrant

women I interviewed, finding a good job, buying a car, having an urban apartment are not unreachable dreams, and an older, slightly out-of-fashion phone is easily justified by the necessity of saving to achieve these goals, as Beijing-based Ms. Liu pointed out. For the migrant women, all these symbols of achievement were often concentrated on the mobile phone alone.

The 'good brand' phones were very narrowly defined in the early days of my research: they were mostly foreign, Western brands, with Nokia at the top of the list of desirables, followed by Motorola, Sony-Ericsson, and Samsung (which was the source of some confusion, because it had been so well localized that many of my interviewees thought it was a Chinese, rather than a Korean, brand, and therefore less desirable.) Ms. Ling, who bought her first mobile in 2001, after being in Beijing for 6 months, expresses well how important the purchase was for her:

> "Back then, mobile phones had just started, a lot of people still had big phones, to have a slim phone (like the one I bought) was an unusual and awe-inspiring thing, I felt I was rich. At the time, nobody in my village had a mobile phone! At most, people had a landline at home, my home didn't even have that. My uncle did, so every time I had to call my uncle, ask if my mother was around, he would go and find her, and then after five minutes I would call again. So I would call at most once a month, and it was also very expensive."

For people like Ms. Ling, the money invested in the purchase was substantial compared to what she was earning. Ms. Wang had paid CNY3,880 (about USD515 at the time) for her SonyEricsson camera phone in January 2007, when her wages were approximately CNY1,300 per month (USD175). Ms. Wu bought her first cell phone in 2001 for CNY1,700 (USD225), when she made between CNY500- 700 per month. After spending a few years in Beijing, and becoming more integrated into city life, their priorities changed, as did the mobile phone market. Cheaper models were now on sale that were not automatically considered 'poor man's phones,' and many women switched to Chinese brands, or cheaper foreign models. Their sense of belonging to the city could be expressed in different ways, and was no longer exclusively concentrated on their mobile.

Instead, interaction with Internet-based content started to increase. In the early days of our acquaintance, in 2007, the Internet was not really a presence in the life of my interviewees. The only access to it was at Internet cafes, which they all described as places they would not go alone because the rest of the clientele were mostly male, and they did not feel safe there. But by 2009, five of the six women had an account on social networking sites, especially on *51.com* and on *Kaixinwang*. They had set up the accounts not so much to use features such as photo streams and messaging, but rather to play the most popular games, which at the time were *Happy Garden* (a precursor of the popular US-based Zynga game *Farmville*), *Car Parking,* and *House Buying*.

Ms. Song, who by day worked as a receptionist in a nail salon frequented by foreigners and wealthy Chinese, showed me her life on *Kaixinwang*. She had an array of virtual BMW cars in her virtual garage; she had bought them with earnings she had accumulated by selling virtual vegetables from her virtual kitchen garden in *Happy Garden*, and by parking the cars in friends' virtual parking lots on the *Car Parking* game, all activities that generated virtual currency. Ms. Song lived in a shared bedroom with four bunk beds provided by her em-

ployer, with a communal bathroom for the entire floor, and no kitchen. On *Kaixinwang*, she was in the process of buying furniture for her virtual house, which had a living room, with a stuffed bear sitting on the rug in front of the sofa with a laptop in front of it (at the time, she did not have her own laptop, but had access to her boyfriend's when they met on their day off); a bedroom with pink walls, a modern bed, beaded curtains, all with a very modern look that was very far from her actual living conditions; a patio; and an empty room as yet unfurnished because she was saving money to buy more rooms for the house. Her kitchen garden on *Happy Garden* was an important source of income, and she had a very practical attitude towards it: she bought cheap seeds (all with virtual currency), but when she harvested the vegetables and the fruit she made them into juices, because she could sell them for a premium at the virtual market. Commenting that her virtual life expressed her ideas about how her future life should be, Ms. Song captured what seemed to be the common feeling among migrant women who had stayed in Beijing for a long time: "We are city people now."

Ms. Song's virtual home and cars allowed her to try out a life that was still out of reach in reality, and represented a combination of what she saw on television and in magazines, and what she heard from her clients. She re-appropriated all that content—a fundamental function of ICT domestication in Silverstone's view—to underscore her own participation in a world that was not welcoming her, and it was noteworthy that she did so by earning virtual currency through the sale of juices on *Happy Garden*, deploying online the practicality and ingenuity that she was her main asset in her actual Beijing life.

On occasion, the Internet proved to be useful also to experiment with alternative lives that were defined truly in these women's own terms rather than in imitation of the lives of urbanites, and also not in attempts to improve one's quality by finding better jobs or taking classes, as both their employers in the city and their parents from the village recommended. I discussed in chapter four how Ms. Wu and her friends bought a computer because they kept on hearing it would be useful for work, but ended up using it to look at online dating websites. The opportunities offered by mobile phones, instant messaging, and websites for dating men of their own choice were immediately evident to all women. A mobile phone could help sustain a relationship with a man they had met in the city and to escape arranged marriages in the countryside. Chatting with random people on QQ was the very first activity all the women engaged in when they first started using the Internet, which led to many random encounters, both positive and negative, and some dating with people who would engage with them as they presented themselves, rather than as low-class migrant workers. This was in stark contrast with attempts at dating Beijing residents, who would usually end up badly because of the rural origins of the women. Ms. Wang did marry a Beijing resident and got the much sought after urban *hukou*. But, as she complained when I interviewed her in 2010, her mother in law would not let her forget that she was a peasant, and that she thought that her son had married beneath himself. This despite the fact that Ms. Wang, an intelligent, reliable, and hard-working woman, had been promoted several times at her job in the university, and had gone from being a maid to being a white collar worker, whereas her husband was unemployed.

Ms. Ling, a friend of Ms. Wu, had become completely disillusioned with dating urbanites after getting married to one and divorcing him shortly after. She was getting closer to her thirtieth

birthday in 2009, and thought that as an older divorcee of rural origin she didn't have any chance to find a good man and have a family. She started to look for potential dates online, and created a profile on a dating website that specialized in Chinese women and foreign men. In order to do so, she became a keen observer of foreigners' habits online, and adjusted her own practice to be able to engage with them. Firstly, she set up two email addresses: one on a well-known Chinese email provider that was also used by Japanese and Koreans, and therefore familiar to them, and one on Hotmail, because she saw that many foreigners had that kind of address and might trust more a Chinese who used it too. Then she downloaded Microsoft's Instant Messaging software, because she had discovered that the ubiquitous QQ was not used outside China. She described this too as a way to show that she was familiar with foreigners' practices, and therefore to differentiate herself from other women who wanted to date foreigners, but whose continuing attachment to Chinese communication tools and habits showed that they weren't as willing to engage with them as she was. And finally, since her English was not sufficient to write her own profile, nor to engage in correspondence with men who contacted her, who often were not native English speaker themselves, she used the translation website BabelFish to translate all communication. When she described to me her strategy, she also showed me the people who had emailed her in the past few days: a multi-national collection of men of different ages and professions. She emailed a few of them, using BabelFish, and then left for an appointment with one of them who happened to be in Beijing. When I talked to her again in 2011, she was rather disillusioned by the process, and thought that the Internet did allow her to meet new people, but also created the illusion that people could understand each other across cultures, which in her experience had not been true. She was still dating foreign men, but she had decided to limit herself to Japanese and Koreans, as they were culturally closer, and the risk of misunderstandings and disappointments could be minimized.

For these migrant women, ICT had become a way to interpret city life and begin the process of integration in it. Even when urban residents rejected them, they could participate in some aspects of the culture that they were being excluded from by going online. They could watch the same videos and listen to the same music that Beijinger listened to. They could create their virtual houses, even though they knew these were unreachable dreams in Beijing, (though maybe not

FIGURE 1: **Imagining the future on social networks.**

in a second- or third-tier city.) They could experiment with different versions of themselves, like Ms. Long in her profile on *51.com* where she had posted photos of a couple in wedding attire and jokingly told me that the woman in fact was her, or like Ms. Ling whose profile on the dating website for foreigners did not quite match her actual life. At the same time these women could continue to be in touch with their old lives by playing online games with class-mates who had remained back home, or who had migrated to other places. The Internet was, in many ways, the safest place to express their new-found urban identity—away from the re-proaches of their families who were suspicious of the freedom these women had found in the city, but also away from the criticism and the instructions to 'improve themselves' that they constantly received from urban residents. Even though ICT devices and the use they could be put to were important for one's status in the city, ultimately the Internet proved to be a place where *suzhi* did not matter at all, or rather where it could be purchased like an online BMW with the virtual money earned from the sale of a virtual harvest on *Happy Garden*.

3. Rural Residents

Ms. Song was not alone in her passion for games on social networks and especially on *Kaix-inwang.* The site was targeted at urban users, white-collar workers, and students (Rabkin, 2011), but some of its games were equally popular in the countryside. The nature of games such as *Happy Garden* or *Car Parking* is such that the more contacts a player has, the more successful she can be at the game; many migrant workers said that this spurred them to get as many people as they could to play, including former classmates, relatives, and friends in their home villages. This was how Mr. Ye, a young rural resident who worked at an actual farm near Village B, had started playing *Happy Garden*. Instead of migrating to urban areas like most of his classmates, after he graduated from middle school he found a job near Vil-lage B. He was still in touch with his classmates through QQ and social networks, and had received the invitation to join *Kaixinwang* and to start playing *Happy Garden* from a number of them who had moved to Beijing. He was living in the dorms that the farm provided to the la-borers and did not have easy access to Internet cafes, which were all located too far away for occasional trips in the time he had off work. However, he was in good terms with the people who worked in the office of the farm, and they allowed him to use the computer there when they were not working. He spent his evenings as a Happy Gardener, and his speciality was stealing virtual rabbits from people on his network, and then selling them to accrue credit and enlarge his own virtual farm. When I asked him if playing *Happy Garden* did not seem like work, given that many of the tasks he had to do at the farm were not dissimilar from what he was doing online, he was puzzled. For him, *Happy Garden* had nothing to do with the country-side: on the contrary, it was a way to be connected to the city, and to what was fashionable there. He emphasized that the classmates who had invited him to play were living in Beijing, and that the game was very popular among people who worked in offices. *Happy Garden* was a way to get away from farm work, and to feel like he was participating in something that was happening in far-away and definitively non-rural places.

Another player who was addicted—in the words of his mother—to *Happy Garden* was a four-teen-year-old boy in Village C, Little Xing. Neither of his parents had finished middle school, but the family was quite well off and known in the village as 'the rich ones' because the father had migrated to Singapore in the late 90s. He had started off as a simple scaffolding builder,

but had subsequently been promoted to positions of responsibility, and was making good money. When he came back to visit the family, he often brought back new mobile phones for everybody, as well as computers. The family was one of the first in the village to have a laptop and an Internet connection. The laptop had been a gift to Mrs. Xing, but she could not use it by
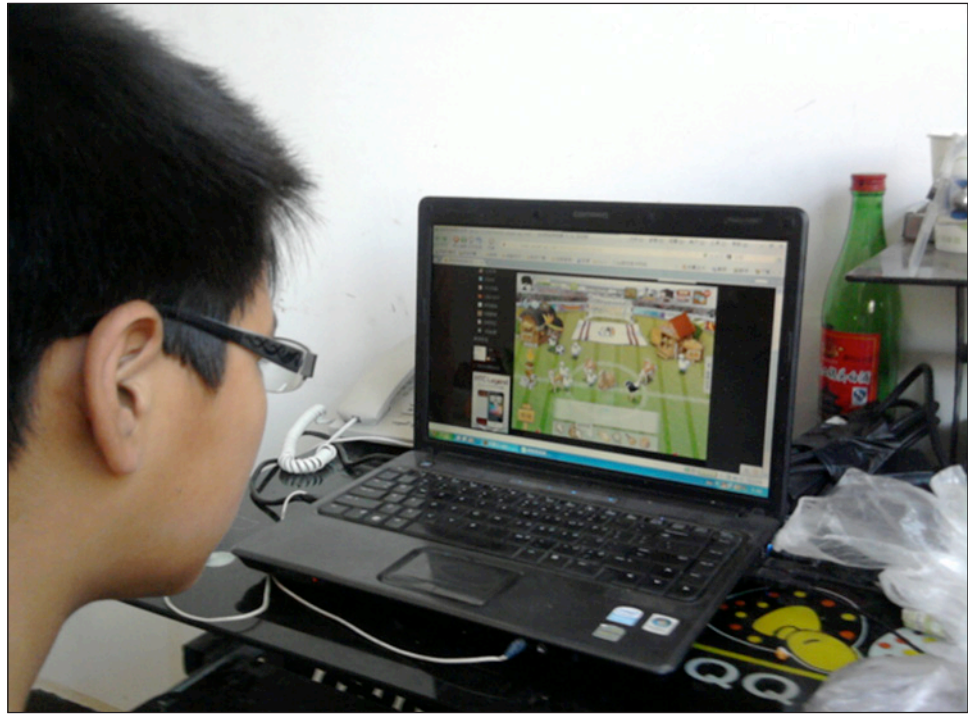
FIGURE 2: **Playing Happy Garden in the countryside.**

herself, so it was mostly controlled by her son. In the summer, he spent all his waking hours in front of it, playing games, chatting on QQ, watching movies, and downloading music. He was a master of multi-tasking, and often had two games going on at the same time. He typically kept *Happy Garden* in the background, checking that nobody stole his produce and farm animals, and occasionally raided other farmers' plots, but rarely fully engaged with it. The bulk of his attention was devoted to war games, and making online friends to create the alliances needed to win them.

Seen from a double articulation perspective, for Little Xing's mother the laptop was meaningful only as a commodity, in the sense of an object that represented her family's economic success, but, since she could not use it without the intermediation of her son, she did not really engage with the second aspect of double articulation, i.e. getting involved with and incorporating the content that was available through it. For her son, however, the laptop as an object was already fully part of his life, and he did not express any opinion about whether it gave his family prestige in the village, whether it was a good/desirable brand, or how it rated compared to the computers that some of his classmates had. For him, the laptop had already been domesticated, and was the equivalent of the refrigerator in terms of its presence in the household—something that was just there as it was in other people's houses, and taken for granted. The importance of the laptop resided in the content that Little Xing could access through it, and through which he created a world of connections and of media content that went well beyond the borders of his daily life. His online contacts were compartmentalized: there was virtually no overlap between his *Happy Garden* network and his war game one. Most of his online friends were neither classmates nor village friends. They were just people he had never met in person, but with whom he shared a set of interests or just a set of goals,

such as winning war games. For his local friends and classmates, he used the instant messenger QQ, to keep in touch, share the latest (which during the school year included homework), and organize outings.

The compartmentalization of contacts and the use of different modalities to keep in touch with different people was common among young rural residents. In particular, instant messaging through QQ was typically used for group discussions rather than to chat with individual friends, who were contacted via SMS, even though it was more expensive. Ms. Tao, an 18-year-old girl from Village C, describes clearly how this works:

> "I feel that using QQ doesn't impose on other people... if it's classmates, or a few friends, then linking up this way is quite good, so we are all together, then everybody can speak and everybody can see who's talking, when there's more people it's more lively (*rè'nào* 热闹)! But if I want to talk to a friend for a specific reason, I will call or text them, not contact them on QQ. It's closer, that way."

Ms. Tao grew up in Tianjin, where her parents were migrant workers, and returned to the village a few years ago, partly because as the daughter of migrant workers she did not have access to local public schools. Her father bought a computer when they still lived in Tianjin, and she recounts that he was very pleased with it:

> "Because other people in Tianjin already had a computer, so (my dad) really wanted his own family to also own one, so we could be like them, not like rural people. After he bought it, he was really very happy."

Neither her father nor her mother used the computer very much (it might be telling that the only game they liked playing, with the help of their daughter, was a game called *Landlord,* which works very much the way the name suggests). It took some persuasion from Ms. Tao and her brother to convince them to connect it to the Internet: the parents felt there were too many untrustworthy people online, but also that their daughter might jeopardize her own learning if she did not control her impulse to waste time online instead of looking for useful material for school.

From these individual stories, we begin to see patterns that are linked to both age and gender. For older people, computers are particularly meaningful as commodities, because they serve as visible signs that they have achieved a certain economic position, if not social status: they are a way to earn face in front of family and neighbors, and *suzhi* in front of strangers. Content takes second place, because in most cases their engagement with computers is limited due to the practical difficulties discussed in previous chapters.

Younger people are more aware than their elders of the nuances of brands, appearance, and performance in the commodity aspect of computers, but they do not necessarily tie them to having face and being respectable. Most of them have access to computers in Internet cafes or at school, and see computers as objects that are or will be, inevitably, part of their lives. Their engagement with the media aspect of computers and ICT in general is much more sophisticated than that of adults. The creation of social networks that leverage different tools is a way to carve out their own space in environments that are heavily controlled by adults. Local, peer networks that are based on the combination of mobile phones QQ and text messages allow young people to create and reinforce ties that escape the control of family and neighbors. The use of QQ and social networks on computers allows them to maintain relationships with older classmates and friends who have already migrated, and to try out

aspects of urban life, but also to have concrete contacts to lean on if they decide to move themselves. Nobody, among my rural and urban interviewees, made the decision to migrate to a certain place based only on information gathered online from former classmates, and in fact most such decisions were made during Spring Festival, when migrants went back home and could be asked directly about their urban situation. But online relationships gave young people a space of their own within which to explore these ideas and opportunities away from the watchful eye, and sometimes the direct pressure, of their families.

For young people, the Internet may very well be a tool to partake of the modernity that has not reached the countryside yet, but it has no intrinsic 'quality raising' powers. The idea that rural residents may have a low *suzhi* does not occur to young kids until they have a chance to leave their local context. As soon as they do that, however, the label of 'backward' is attached to them, even if the trip they take is a simple commute to a county seat to go to high school, as Ms. Yang bitterly recalls:

"Then I went to a very good high school in the town, because I did well in middle school and my dad really believed in education, so even though my family did not have much money, I went there. But it was just me and another girl from nearby villages, everyone else was from the town, and their families all had connections and knew the teachers and each other, so we were always treated poorly (…) These students always gave gifts to the teachers, and so were treated well and could sit in the front. We had to sit all the way to the back, where you can't even hear the lesson well, and often the teachers would not even look at our homework, just because we were from the countryside. It's not that far, but the other students, they really looked down on us."

For children who go online before leaving their village, the realization that there is a big urban-rural gap can come earlier, but it is a message that was already brought in by television, as Ms. Deng highlights:

"Watching them (urban people), especially on tv or videos or something like that, watching them, they are urban people who live this kind of lifestyle, I feel that there is quite a distance from (my life) here"

The difference is that whereas it is difficult to create a counter-narrative to the urban life shown on television, on the Internet one can try to keep up with what is going on in the city and participate vicariously in this lifestyle while looking for an actual or virtual way out of the countryside. Mrs. Shan, the kindergarten owner I cited at the beginning of the chapter, has had a computer since 2005, and when I tactlessly commented that this was the early days for such technology in the countryside, she replied indignantly:

"You can't not keep up, I was afraid of falling behind (city residents), so I bought a computer… It wasn't that early, at the time there were computers even in the countryside, although there were few! (…) I was at my sister's house (in the nearby town) and she was talking (about computers) and I felt like an idiot, then I went home and I just had to learn about computers. (…) I felt 'everybody has a computer and you don't,' when you're with them you feel you're ignorant, you're not following trends, you're just like a rural woman, you just look like a fool, don't you? I don't like to feel like a social outcast, I want to follow society's pace of progress, so I bought a computer and started using the Internet."

Mrs. Shan does not use the computer much to communicate via QQ or to do video chat, because she feels that, when it comes to human relationships, the Internet "is false." However, she uses it extensively to keep up with the news, especially national and international, and to improve her business both by searching for information related to kindergarten rules, and

by looking for teaching methods for kindergartens, as well as for new activities, dances, and songs for her pupils. She is very keen to run a business that is as similar as possible to the ones that are located in the city, and is recognized as modern and up-to-date with the latest developments in the field, and the computer is one of her main tools to achieve this reputation.

This was a common strategy, especially among middle-aged men who had experienced migration, and were aware of the perceived low quality of their villages. They used the Internet to keep up with trends and news, and set themselves apart from their co-villagers as people more attuned to urban ways. In Village C, Mr. Shang prided himself on being very computer-savy even though he was in his late 40s, comparing himself with his co-villagers who were simple peasants without many interests outside the village:

> *"But this is the countryside, people don't have much education, they just have a short-term perspective (yǎn-guāng bǐjiào duǎn* 眼光比较短*), so most of what they do with the computer is to play games."*

He even had a *Weibo* account—a microblogging service similar to Twitter—and said that he not only updated it very often, but he also kept it private, because the information he posted there should not be seen by just anyone.

Mr. Xue, a man in his late 20s and a middle school graduate, worked as a cook in a nearby town and had not experienced migration to a big metropolis. But in the village, he had a reputation for being very knowledgeable about a wide variety of topics (as he showed me the very first time we met, when he declared that olive oil was one of the agricultural products for which Italy was famous), because he spent hours online reading news and bulletin boards.

It is not a coincidence that these examples are all from men. They reflect some of the attitudes I have explored in previous chapters, where ICT are seen as tools that can be used competently only by people who are more educated, and who have a higher level of *suzhi*. For women, especially those who are older or who have not migrated, ICT use is more related to the personal sphere—keeping in touch with family, playing simple games, and occasionally making new friends—in order to catch a glimpse of the external world. For rural men, engaging with the media aspect of ICT is often directly connected with the idea that it can help one go beyond one's boundaries and establish one's quality and competence. Even for those who do not use ICT, such as the Mr. Cui whose quote opens this chapter, it represents a symbol of development, expertise, and quality.

This view is generally shared by many of the people who bring ICT to the countryside and believe that they are bringing with it a chance for locals to improve themselves. Migrants, returned or not, belong to this category, as do the so-called University Graduate Village Administrators (*dàxuéshēng cūn guān* 大学生村官), young people who serve as assistants to village officers for three years as part of a wide State-run program to improve the quality of rural administrators.[5] Ms. Sun was one of these administrative assistants, and after spending three years working in a village in Hebei, she now lives in Beijing. She recalls how most of her job consisted in helping local officials to go online to find information that they needed for their jobs, and to help them write reports because many of them could not type very well. Most of the rural officers she and her colleagues are sent to help are people in their 40s and

50s, whose education had typically stopped in middle school. They had computers in their offices—again, as part of the rural informatization policies—but could not operate them proficiently, and in an ironic replay of the Cultural Revolution flow of educated urban youth to the countryside, young, educated, usually urban students were once more being sent to the countryside—only this time to teach peasants rather than to learn from them.

A side effect of having computers in the village hall was that sometimes they became an informal computer community center for the locals. Ms. Sun recalls that in her village, the village hall was open sometimes outside of working hours for people to come and learn about computers under the supervision of herself and another university graduate working in the program. She describes how at first she taught people the basics: how to type Chinese characters, how to open a browser, how to use a search engine. As soon as a minimum of progress was made in this area, many people started going online by themselves, and she recalled with dismay that the only things they seemed to do was find videos on youku.com (a website similar to youtube.com) and play card games. She felt very strongly that the Internet could bring real opportunities to rural residents, from new business contacts for farmers to expand their markets, to educational resources for students, but that their *suzhi* was so low that they did not even realize what wealth they had in front of them. Her feelings were echoed by some more educated migrants, typically good students who had managed to go to university in a big city and afterwards found a job there. The mixture of hopelessness and dismay with which they talk about the situation back home is well expressed by Ms. Liu:

> "My parents always encouraged us to read, and my grades were very good. In my high school, I was in class with 80 other students, but my test results were always among the best... but in the countryside, a lot of parents are not like that; they don't encourage their children to study, they like their children to go out and make money (…) So the hukou system is necessary, otherwise everybody would move to rich cities and these would be overwhelmed. The University Graduate Administrator program will be the key to the development of the countryside, because these are the only people who can help farmers and people without much culture to look for useful information."

Ms. Liu grew up in the countryside, but now that she lives in Beijing she judges it and its inhabitants—which include her parents, who are still in Village B—through the same lenses applied by urban people. Even though she admits that she herself spends much of her off-work online time looking at music videos and watching movies, she applies much stricter standards on what the rural use of the Internet should be, replicating the well-established binary distinction between useful information versus entertainment, developed people versus low-quality people.

4. Conclusion

In this chapter, I have shown how for migrant workers and rural residents the double articulation of ICT is strongly influenced by a nation-wide discourse that casts those from the countryside as people of low quality, and ICT as one of the means that can help them improve that quality. This mirrors the recent history of the relationship that China has had with (Western) technology, seen as the tool that allowed the successful colonial expansion of Western powers. The historical aspect of this legacy has supported the belief that countries that invent and control technology can be successful in the world scene while those who do not are

condemned to be secondary players. The social aspect of this legacy suggests that those who use ICT well can lift their *suzhi*, whereas the rest remain under-developed.

In order to illuminate the interplay between ICT and *suzhi* I draw once again from domestication theory, and in particular from the concept of double articulation; that is, the meaning that ICT objects have as commodities, and as media that carry content. These two values are constantly negotiated between individuals and society, and both the value that my research participants assign to ICT, and some of the content that they engage with, reflect society-wide discourses on quality and development. In writing about mediascapes, Appadurai argues that

> *"The lines between the realistic and the fictional landscapes [viewers around the world] see are blurred, so that, the further away these audiences are from the direct experiences of metropolitan life, the more likely they are to construct imagined worlds which are chimerical, aesthetic, even fantastic objects, particularly if assessed by the criteria of some other perspective, some other imagined world."* (Appadurai, 1990:9)

For viewers/users in rural areas and at the margins of urban society where migrant workers live, mediascapes provide a venue for creating "imagined lives," which they can then incorporate into their real ones, and sometimes even make real: Ms. Song had a laptop first in her virtual house on *Kaixinwang*, and then in real life. For my interviewees, mediascapes combined an aspect of evasion from the hardships—or simple boredom—of daily life, but also a way to try out possible new identities, or more or less probable new lives.

In concluding, however, I would like to add a caveat. Clearly, this chapter analyzes a specific type of engagement with ICT objects and content; this does not imply that *all* that my research participants do with ICT should be seen in this light. Ms. Long did not feel a surge of low *suzhi* every time she looked at her *Little Smart* phone, and Mr. Ye did not constantly think of becoming an urban resident when he played *Happy Farmer* with his urban friends. Quality, development, urbanization were undercurrents in their lives, which sometimes happened to be expressed through ICT.

The double articulation concept provides a useful lens to look at and understand how people engage with the ICT object and content as intrinsically linked, but as alluring as the concept is in theory, it is very difficult to apply in practice.

Maren Hartmann points out that what began as a strong and central idea in the theoretical articulation of Silverstone was almost completely ignored in subsequent studies of domestication in practice (Hartmann, 2006:81). Earlier case studies based on television and radio indicate that it is not easy to resolve the issue of how to understand how people engage with media content, beyond choosing certain programs, and negotiating schedules with other members of the family, as there is no direct, straight-forward connection between the content people choose and the way it is interpreted and incorporated into their lives. Hartmann argues—accurately, in my view—that this is partly because of the focus on 'old media,' and partly because of researchers' dependence on interviews and therefore on self-reporting rather than on long-term ethnographic involvement, which would give access to nuanced details regarding the content sought and/or encountered by users, and how this content is interpreted and re-imbedded in their daily lives. Clearly, the reach and complexity of the content that enters ICT users' lives has grown enormously with computers and mobile phones. To incorporate this dynamism into the existing

theoretical framework of domestication, Hartmann suggests a return to ethnographic methods, and an expansion of the concept of double articulation to include a third aspect, that of the individual's engagement with content, be it a text message, a website to which one returns over and over, or the content that has been traditionally analyzed by domestication studies such as tv and radio programs (*Ibid*:96).[6] But while studying individual engagement with specific content is complicated even with the most embedded, committed, and in-depth ethnographic practice, especially if the researcher is interested in getting a comprehensive view of her subjects' ICT use rather than merely focusing on a specific website, or on specific software, there is the issue of access. Even when shadowing research participants while they used the Internet, or accessing the history page on their browser (clearly, with their consent), I gathered only a snapshot of their everyday use, further complicated by the fact that there were often several users to one computer, and their online traces were sometimes too entangled to be clearly connected to any one user. With text and instant messages, the problem is even more complex: what kind of boundaries do we draw around them? How do we understand interactions that take place across different devices and different software?

I therefore used double articulation for drawing out interesting threads regarding the intersection of people's lives, aspirations, ICT use, and the societal discourse that surrounds them. This, I believe, contributes to showing the agency that people at the periphery of China's successful technological development have in determining what they see as successful ownership and use of ICT, in a context that otherwise posits them as passive recipients of others' attempts to modernize them through ICT. But it is not, by any means, the whole story of their engagement with technology, nor of the benefits and drawbacks they experience from it.

Endnotes

1. "Frog in a well" (井底之蛙 *jǐngdǐ zhīwā*) is a Chinese proverb to describe narrow-mindedness, ignorance, and inability to see beyond one's limited environment. A common explanation of the story behind the proverb is that a frog invites a turtle to join him in his well; the turtle tries to do so, but gets stuck, and has to withdraw. The turtle then invites the frog to the sea, so he can see how vast and deep it is, but the frog cannot believe that there is such a thing outside his well.

2. See (Murphy, 2004) for an in-depth discussion of the role of schools and education in raising the quality of rural residents and making them modern Chinese citizens.

3. The concept of 'double articulation' has a complex genealogy, from linguistics (Hartmann 2006:85) but also media sociology, with Stuart Hall's "encoding/decoding" model of media messages which challenged the "all linear 'media effect' models" and emphasized production, not only consumption, of ICT and their content (Wajcman & Jones, 2012:680).

4. It is telling that none of the empirical essays in the latest anthology that collects papers on domestication (Berker, Hartmann, Punie, & Ward, 2006) discusses issues related to the double articulation; there are several chapters that deal with the internet or with mobile phones, but they all focus on some aspect of the four phases of domestication, rather than engaging with the dual nature of ICT objects.

5. The program started in the mid-2000s, one of the many initiatives to bridge the gap between rural and urban areas, and the incentive for university graduates to participate is that after serving their rural stint, they can get a *hukou* for the urban area that is sponsoring the program in the village where they were posted, or get preferential treatment in the exams taken to enter the civil service.

6. This, in reality, was already part of the initial agenda of domestication theory, but was never fully articulated nor exploited: "It is possible to distinguish between three, rather than two, dimensions of message and articulation: that grounded in the object, that in the symbolic environment to which the technology gives access, and that of specific `programme' messages." (Silverstone & Haddon, 1996:74)

7 | Conclusion

"The countryside now is easy.
Between subsidies for farming and work outside the fields,
farmers can make a good living, they don't have as many needs as people in the city.
Living here is cheap, they have a house, so it's ok. People in the city have so many pressures.
Life in the countryside is quite relaxed."

Mr. Yang, Village A

"(Farmers) need to shower more often, but how can they shower on a dirt floor?"
Mr. Li said of the farmers and their old adobe homes in the mountains.
"If you don't shower a lot, that's no good. Put simply,
we want to teach ordinary Chinese people
to bid farewell to several backward ways of living."

Mr. Li, Executive Vice Commander of the "Moving Into Towns" Program in Shaanxi

(Johnson, 2013)

1. Techno-Modernism in Contemporary China

None of the villages where I conducted fieldwork will exist in ten years. As part of the "Building a New Socialist Countryside" framework launched in 2006 to address the increasing gap in living conditions and incomes between rural and urban areas, provincial governments have begun a series of programs of 'resettlement of the countryside' and 'land consolidation' that are aimed at eliminating smaller villages and relocating their inhabitants to towns. The program, called "new urbanization" (*xīnxíng chéngzhèn huà* 新型城镇化) aims at creating more efficient urban and peri-urban settlements, so to avoid a further increase of mass-migration towards large cities such as Beijing and Shanghai; at inventing a new class of consumers (the newly urbanized farmers) who will support internal demand; and at recovering cultivable land and accelerating the growth of a modern, large-scale agricultural industry. This, together with industrialization, is considered by the government as an "inevitable" part of China's modernization, if the country is to follow the same path of development that has been experienced by Western countries (Long, Liu, Li, & Chen, 2010; Wu, 2013).

Experiments in rural reconstruction have a long history in China, and the current one, which started quietly as a series of localized trials a few years ago, is slowly expanding to the entire country. In 2011, residents of Village A had been told that their houses would be torn down soon, although they were not given a precise date. Many were already looking for apartments in the bigger village nearby or in the county seat, even though they did not know the amount

of compensation they were going to receive. When I visited a friend of Ms. Long—a returned migrant worker who had been in Beijing for a few years and had gone back to get married and settle down in her native village—she took me to visit the apartment that the village was building for her family in a nearby town that was itself being built from the ground up to house relocated farmers. The apartment was rather spacious, but it was in a six-story building, attached to a long row of other similar buildings, in an area with no shops, no schools, no services, and no jobs. She was rather looking forward to move there, as the apartment had running water and indoor facilities, and reminded her of the standard of living she had observed in Beijing. But her parents were not happy to leave their spacious house, with a courtyard, in the middle of the village where their family had lived for generations, with easy access to their fields and a reliable social network.

Village B in Shandong will also be torn down, together with all the villages nearby. A brand new station for the new high-speed train that connects Beijing to Shanghai had just been opened in 2011, and the county was busy reorganizing its territory for the occasion. In summer 2011, the station had just opened, a sleek construction of steel and glass that looked like it belonged in a metropolis rather than in the middle of the wheat fields and apple orchards that dot the area. The rest of the infrastructure was still being built, and there was still nothing but countryside between the station and the nearest urban area. Clichéd as it may be, stepping out of the futuristic train was like time-travel: outside of the station there was a donkey-cart that sold rural snacks to departing travelers, and the old taxis waiting in the shadows to bring to the city the handful of passengers who got off, sped through on half-constructed and completely empty roads. The county was planning to build three urban districts for all the rural residents who were living in several small villages scattered throughout its territory. The traditional single-story houses will be torn down and, according to the local residents I interviewed, the land would be returned to agriculture. Most of what the rural residents knew about this was a mix of hearsay, guessing, or wishful (or fearful) thinking. Mr. Hua said that each farmer was going to get three *mu* of land per person, instead of the current two, and a lump sum to buy an apartment in the new districts. His daughter had already had her mobile phone shop torn down to make space for the new road that led to the train station. The other family shop was also at risk, because the government was beginning to force businesses to become more legal and less improvised, to conform to rules and regulations, and to be located in areas that are zoned for commerce, which will mean the end for Ms. Hua's business model. But she is confident that with her knowledge of the market and her brother in Shenzhen she will be able to make the transition to the 'new economy' and thrive. Mr. Hu, who lives in a village near Ms. Hua's, confirmed that big changes were coming to his village too, but that nobody had not been told anything officially. Many people were already looking for alternatives and making contingency plans.

Village C will become an 'urban village' (Hsing, 2010), that is, it will be swallowed by the city, whose tall apartment buildings are already looming across the horizon. It is likely that the old walled compounds will be demolished, and that the ubiquitous, multi-storey, anonymous apartment blocks will appear instead. The rumor was that the compensation was going to be calculated on the basis of the volume of the house that will be torn down. Many people had therefore started adding second or even third floors to their houses, which they then left empty and unfinished, adding to the general air of desolation.

For the state, such 'consolidated' villages are more efficient, less costly to manage, easier to control, and allow for the recovery of cultivable land. The mass-transfer of rural residents to urban areas can, in theory, improve the material living conditions of farmers—although many of my older interviewees did not think that having running water was worth the loss of freedom to come and go as they pleased from their own stand-alone house—and increase agricultural productivity. But, as eloquently shown by James C. Scott, the "narrowing of vision" characteristic of the state's bureaucracy pursuit of such development and modernization projects inevitably leads to the dismissal of local knowledge and modes of organization, and produces unexpected consequences (Scott, 1998). In the Chinese case, such consequences are already evident: urbanized farmers do not have any source of income because there aren't jobs near their new homes, and they are too old to re-train or to move where the jobs are. At the same time, they do not have their small plots of land any longer, so cannot grow their own food. They become completely dependent on family members, or on unreliable and uneven public welfare. They also completely lose the social network and, perhaps more importantly, the social identity that defined them as part of a community in the village. For younger people, these changes are easier to navigate, and at times even welcome, as we saw above with Ms. Hua. They are more adaptable; unlike their parents', their own identity is not as tied to the village. They are not farmers, even when they know about farming, and could return to farming if need be, as we saw in chapter five with the returned migrant who could no longer find a job in the city and returned to his home village to take up full-time farming.

Rural and urban China are currently going through a period of "scientific" development, akin to what Scott describes as the "high modernist" aspiration based on scientific and technical management (*Ibid.*), where the country is being physically reorganized to match government ideas of a modern country. What does this seemingly unstoppable "march of progress" then mean for the findings I discussed earlier, so deeply embedded in the social organization of the three villages and their relationship with urban areas as mediated by migrants? Even while still in the field I wondered whether my research was going to become simply a historical account of things past: villages that will soon disappear; agriculture that will become a business managed by professionals who can and do use ICT, and not by farmers for whom agricultural work is as much a form of life as it is a source of income; and old aspiring users of ICT overcoming their difficulties with what they see as the vagaries of ICT through either other people's help or their own death. In other words, will technology simply change the social over time? Is what is happening in the villages merely residual, something that will disappear as soon as this generation passes? Are the disappointing results of ICT uptake in productive activities simply a "transitional problem," where the "old timers" described by Lave and Wenger need to be retired for the effects of ICT to be evident (Lave & Wenger, 1991)?

The answer to this is, in a way, yes: agriculture is already being transformed from a source of self-support and extra-income (as well as a source of identity) for smallhold farmers into commercial operations that lease land from farmers, hire them back as laborers, and deal with agriculture as a business—commodification done in a slower, but still pervasive and seemingly unstoppable, way. Rural-to-urban migrants are staying in cities for longer periods, and often raise their families there despite huge difficulties (Hu, Xu, & Chen, 2011). However, I argue that it is important to understand the ways ICT is and is not currently being incorporated into these marginalized populations' lives for two reasons, which I will discuss in detail

below. The first reason is that use and non-use of ICT can be an entry point for understanding patterns of social organization that persist regardless of ICT and regardless of the state's attempts to change them. The second is that policies for the development of people, in this specific case through ICT, are often constructed on the basis of a series of assumptions about the beneficiaries: what they need, and what their goals are. A factual counter-narrative from the perspective of these so-called beneficiaries might be useful, at least for correcting some of these assumptions.

2. The Persistence of Social Organization

By now, it is very likely that in the most developed of the three villages, Village C, a few people have tried tablet computers, and perhaps found them easier to navigate than the old desktop interface. Cheap, local brand smartphones were already appearing in Ms. Hua's store in 2011, allowing at least younger users to go online whenever they wanted, without having to travel to the county internet cafe. But it would be a mistake to think that the latest technologies have eliminated the issues with ICT uptake that I have explored in this work. Technology offers a vision of permanent upgrade, or "waiting for the next release" which will fix all bugs, make usability better, make devices more powerful, easier to use, more democratic; but the same problems keep on reappearing. Technology moves faster than people, and even when the current generation of farmers is gone, the general level of education in the countryside has been raised, computer classes are taught in all rural elementary schools, there will still be aspects of technology that are beyond the capacity or interests of users.

What is important to note, beyond issues of technological progress and human stasis, is that there are good reasons for people to hold on to their old social structures, which then influence how they relate to ICT. Given the post-1949 history of China, rural residents are highly suspicious of any centralized policy to 'improve' (yet again) their lives, and are extremely reluctant to surrender their locally based social structure—fraught with tensions and contradictions as it may be—to the promise of a modern life that is strongly based on commodification and consumerism. In the village, the dominant system of social organization is based on the extended family, whose history is carried out over generations. There are sophisticated systems for keeping track who is a creditor and who is a debtor (in money and other matters), who needs help and who can spare help, what the hierarchy of the families is within the village, and of members within the family. These relationships are kept alive and actual through daily interactions that on the surface are nothing but routine—the chat among co-villagers on the way to and from the fields in the late summer afternoons that I described in chapter five—but in fact constitute the fabric of long-term social organization. Those meetings provided the foundation of trust-based knowledge circulation: people knew and could assess each other and the information they share. People knew whom they could ask for favors and whom they should not. ICT brought back by migrant workers would find their way to these groups, through the family members who had received them, or who had learned how to perform specific tasks; ICT-mediated activities taught by migrants, or by younger children, would be shared, debated, evaluated, and often adopted within the group. The domestication process could take place because it was heavily mediated by trusted intermediaries, and took place within the family or, at most, within a well-known group of villagers. Conversely, the domestication of ICT completely failed in the case of farming, because it was not building

on the village networks of trust and pre-existing relationships. Migrant workers and young people were not aware of the use of ICT for farming, and could therefore not mediate it for their families. The programs and policies that tried to popularize agricultural applications of ICT were doing so from the perspective of a large scale commodity market where price and productivity are the dominant factor, and where ICT is designed to support just such a market-based system. The organizing principles of village agriculture—which are being dismantled with the new urbanization plans—are still based on some form of solidarity, on the oral exchange of information in a context where interlocutors are known and trusted (or *not* trusted, but still known in person), and on values such as long-term stability rather than higher income. As Thøgersen and Bislev put it:

> *"Private farmers competing in an impersonal market place may increase agricultural production and generate economic growth—as actually happened in China during the years after decollectivization—but they do not necessarily generate the socially coherent communities that are central to most Chinese visions of a good village life."* (Thøgersen and Bislev, 2012:4)

An ICT system that truly worked for this kind of agriculture would have to be based on these principles, rather than on urban- and market-based views. As Duguid points out when discussing Orr's work on Xerox photocopier technicians, the design of a computer-based system that could support knowledge sharing in a way that was as successful as the technicians' social-based ways happened only once the principles that underlined their interactions were taken into account:

> *"To engender the necessary trust, (the developers) sought a technician-driven, not a management-driven, system; to screen for accuracy and redundancy, and so keep the system lean and the tips useful, they developed a mechanism of validation (in essence, peer review); and to resist perverse incentives, they rejected a financial reward for tips, preferring these to be labeled with the name of the submitter, which further helped build trust as well as reputation."* (Duguid, 2006)

Defining the actual principles that an ICT-for-agriculture system would need to uphold in order to be successful among smallhold, aging farmers is beyond the scope of this dissertation, but it is clear that the current systems are not matching the habits and values that still define these people's practices.

3. Challenges to the Linear Logic of ICT Diffusion and Use

Rural residents' insistence on remaining attached to their notions of community is mirrored by urbanites insistence on what rural residents need from ICT, and this work makes a valuable contribution in providing a concrete, ground-up assessment of the unintended consequences of the urban elite-led informatization of the countryside. Too many of the projects to disseminate ICT in the countryside   implemented by well-meaning but not equally well-informed policy-makers, NGOs, and businesses do not take into consideration the actual conditions of both the environment and the users in a way that is even more basic than the social organization of knowledge sharing described above. As discussed in the introduction and throughout different chapters, the general assumption of public opinion, scholars, and policy-makers is that rural residents are in need of ICT help, rather than being people who are already making their way through ICT use, and benefitting from it in their own ways. While in Beijing, I talked several times with well-intentioned organizations that wanted to help rural

residents through various ICT-based programs. The fundamental idea was always the same: that rural residents had problems, and that urban-developed solutions could be delivered to them through ICT. One program in particular stood out from my year of fieldwork: an e-learning project for 'rural professionals' in the province of Qinghai, one of the most remote and least-developed areas of China. The project was entirely based on Powerpoint slides available on the organization's website, so that, it was thought, anyone who wanted that kind of education could just access it online. The enthusiastic project manager admitted that the slides were heavy, and slow to load even on their fast, ADSL-connected computers in Beijing; and that nobody in the organization had ever been to Qinghai, nor had talked to any possible user of their program. It was an egregious case of "build it and they will come," but it was also a program that made sense given what the organization had assumed about their targeted audience: that they needed that information (which was debatable), and that they would look for it online. There was never any consideration of whether computers were available and connected to the internet, and whether searching online for the topic was what the audience would do, or was capable of doing. On the one hand, rural residents were assumed to live in the same material conditions as urbanites; on the other, they were assumed to be needing help and guidance, but also somehow to be able to find it themselves through a search engine.

The stories of older women such as Mrs. Ouyang playing cards online with the help of her son; of Mr. Liu calling his daughter in Beijing on his mobile phone to ask her to look online whether the appliances sold at the county store were selling for a good price; of Mrs. Yang teaming up with her neighbor to find videos of new dances which they would then teach to their fellow villagers, will hopefully serve as correctives to the urban-centric view of hopeless rural residents. From a meso-theory perspective, these findings challenge the still prevailing linear logic of diffusion that sees technology moving from the center to the periphery and from early/advanced users to the masses without really changing its purpose or the way it is used. The theoretical lens through which I interpret my field findings, domestication theory, offers an alternative to the "belief in the one-sided transformative power of technology"(Berker, Hartmann, Punie, & Ward, 2006:5). By extending it to a non-Western, non-urban context, I seek to add many more sides to what can still be the transformative, but not straight-forwardly so, power of technology. Domestication is a particularly effective counterbalance to a linear narrative of progress and diffusion of technology because it points out how these processes are rarely linear: they can be interrupted, resumed later on, reversed, or fail. And because the adoption and use of ICT involves not only the direct user/consumer, but the entire family unit, all family members are involved in the different phases of domestication, and can influence its outcome.

We saw in chapters three and four how older people, especially women, who did not imagine themselves as ICT users at all, ended up becoming so, even though many depended on other people. In the environment where I carried out my research, intermediation assumes an even more important role than in the original domestication theory, where it is rarely dealt with explicitly.

There is a recurrent typology of intermediaries: mostly they are informal; that is, it is not their job to teach or help people to use ICT. They are typically family members, who show their

parents or siblings how to use special functions of a mobile phone, or who download music or e-books for them. They can be 'purposeful' intermediaries, such as the young Mr. Qiu in Beijing. He had had a computer at home before coming to Beijing as a migrant worker, had left it to the care of his parents, and had taught them how to use QQ and video chats so that they could stay in touch with him while he was away. His tutelage continued while he was a way, with his parents asking him for computer advice and help via phone, text message, and through video chats when he had time to go to an internet cafe to call them. Intermediaries can also become so 'by accident,' as was the case of the son of Mrs. Ouyang, who simply used the computer in a place where his mother could observe him and notice that there were activities such as playing cards that she recognized and enjoyed. He then helped her with it, but had not set out to teach her how to use a computer in the first place. And sometimes they are unwilling intermediaries, such as Mrs. Yang's daughter, who first taught her mother how to look online for dance videos, but soon got fed up with what she described as her mother's stupidity and forgetfulness, and then proceeded to refuse to help her except in extreme circumstances. Intermediaries can also be more formal, such as Ms. Sun, the University Graduate Village Administrator I discussed in chapter six, whose job included teaching computer skills to village administrators, or sometimes searching the internet or performinc other computer-related tasks on their behalf, and who also taught basic computer skills to villagers after office hours. Finally, intermediaries can be halfway between formal and informal, such as ICT shop owners who teach their clients how to use their devices in ways that may not make sense from a business perspective, but might do so from the perspective of community. In the villages where I was, there were no examples of official intermediaries such as the tele-center workers (or information officers) that apparently have been hired in other provinces as part of their own informatization implementation programs (Zhong, 2004). The tele-center near Village B did not have any personnel beyond the person who had the key to open it, who was a village employee, and did not know much about how the center, with its computers and lending library, was supposed to work.

Intermediaries mediate what can be a rather disruptive experience, for people used to different ways of communicating, seeking and sharing knowledge, and assessing information. They introduce a new kind of literacy that is based on text, images, videos, and interaction, and they do so in ways that are compatible with the values and habits of the people they are teaching (directly or indirectly). The flipside, as we saw in chapter five, is that they also limit the way their 'learners' can imagine ICT, because what they show is what they know from their own experience. Since very few of them have farming experience, the idea that the internet or a computer can be used in farming has a hard time getting any traction among farmers. And for some of the less independent users, losing access to an intermediary—because she moves away, or is unavailable, or has herself moved on to a new technology—means losing access.

The combination of the arrival of new ICT in rural households and the role of intermediaries that migrant workers assume often results in a reconfiguration of the "moral economy" of the family, a point that is typically glossed over by theories of technology diffusion and user studies alike. The idea of moral economy, as Silverstone points out (Silverstone, 2006), comes from E.P. Thompson's work on the period of transition to capitalism in England in the XVIII century. Thompson defined moral economy as "a consistent traditional view of social norms

and obligations, of the proper economic functions of several parties within the community" (Thompson, 1971:79), in contrast with the norms of capitalism (the "cash-nexus," *Ibid*:79-80) , which are purely economic, and do not include any consideration of local conditions and values. Domestication theory points out that ICT have the potential to disrupt, or anyway reorganize the moral economy of the family, that is the social norms and obligations that members of a household agree (and disagree) upon:

> *"Information and communication technologies by definition offer a restructuring of the position of the household and its members, both internally in the interrelationships they have with each other, in the micro-politics of gender, generational and sibling rivalries, and externally as the threads of connection and disconnection, proximity and distance, extend into public spaces or into the networks of the diasporic or the displaced (…) In one sense the notion of the moral economy is naively empirical. It asks the question in what ways, if at all, households or families create for themselves private and personal cultures, which have consequences for the way in which the anonymous, homogenizing technologies and services of public and commercial life, are used and valued. And, from a lateral perspective, the question arises too of how we can relate an understanding of patterns of information and communication technology use, resistance, participation and the rest to what we can understand as the culture of the unit whose activities with which we are concerned."* (Silverstone, 2006:234 and 238)

Negotiations around ownership, access, and control of ICT, intermediation in their use, tensions around who can purchase ICT autonomously and who cannot, are all aspects of the moral economy of families, and I have described examples of it throughout the text, from daughters *en-skilling* their mothers in the use of mobile phones, to men deciding to eliminate the landline telephone because 'the family' (that is, they themselves) already had a mobile phone, and thereby cutting off access to any kind of telephony to other family members, to women finding a modicum of freedom from the ever-present village control through a mobile phone. The arrival of ICT brings with it a constant yin and yang of disruption and reconnection, with positive and negative effects, and changes that can be more or less permanent. Older women who do not have an autonomous income often see their situation of dependence from other family members perpetuated by ICT. But for younger migrant women, with their mobile phone purchase as a first sign of financial autonomy and independence from village life, ICT can be tangible evidence that they are not any longer in a subordinate position. Ms. Wu, the first of my Beijing informants to buy a laptop computer and always attentive to the outward signs of urban and successful life, summarized this generational change very aptly:

> *"(In Beijing) I learned that economic independence is the most important thing: husbands come and go, but if you have your own money and business, then everything will be ok."*

The mobile phone and the laptop computer were obviously not what gave her the economic independence she identified as the most important achievement for a rural woman like herself, but they represented—to herself but also to her colleagues and her family back in the village—the fact that she was on her way to it.

4. The Country and the City

To conclude a work focused on the ties that exist between rural and urban areas, I cannot avoid echoing Raymond Williams and challenge the idea of the existence of a dichotomy between the city and the country as profound as the one portrayed in contemporary China. Williams, writing about images of the country and the city in English literature, argues that the two places are depicted as opposite of each other—the city as a negative place of capitalism, modernity, and exploitation, the country as a place of peace, innocence, and simple life—in a way that does not correspond to the reality, and yet also serves to support the existing social order (Williams, 1973). Clearly, I cannot argue that the Chinese countryside is portrayed as an idyllic place of peace and innocence, especially in view of the occasionally violent rural protests surrounding land sales, featured prominently on national media, that have shaken the countryside in the past few years. Nevertheless, the countryside is typically spoken of as the opposite of the city in the sense of being a place that is utterly 'other,' the sum of negatives I discussed in the introduction, a place that can only be improved by external help coming from the city.

In reality, urban and rural China have been intertwined in a symbiotic relationship that has become particularly intense since the opening of the economy in the 1980s. Urban growth is powered by factories whose workforce comes from the 'excess labor' of the countryside; this growth, on its part, has allowed a series of policies geared at supplementing meager agricultural incomes, as I described in chapter five. It is true that the countryside is not as developed (in a strictly material sense) as the city, but it is also true, as many of the migrant and rural resident informants recognized, that it is a place where there aren't as many pressures to succeed, and where people can scrape a living from the land—nothing luxurious, but enough to get by on, and with its own dignity. As the quote at the beginning of this chapter shows, there is a clear awareness among rural residents that life in the city is not always better than in their villages. The policies instituted to try to bridge the increasing disparities between urban and rural income and welfare systems (which the central, one-party government considers threatening to political stability) have now created the beginnings of an affordable healthcare system in some rural areas. For example, in Shandong rural residents can buy basic health insurance for about CNY30 per year (less than USD5), which allows them to use rural and some urban healthcare facilities and to be reimbursed a certain percentage of their expenditure. Similar systems are being instituted in other provinces, and although it might not seem like much, it is more than what migrant workers can access in urban areas. Ms. Ling, one of my Beijing informants, and one of the very few rural residents I met who had managed to move her *hukou* from the countryside to a city, regretted her move and was trying to go back to her original rural registration, so that she could have healthcare and the right to eventually have a piece of land.

Smallhold agriculture might be inefficient, but it provides a pension of a kind for people who would not otherwise have one, thereby taking some of the pressure to support elderly parents, off their children. A consequence of this system, which has created what is often a more stable, if poorer, life, compared to the city, is that migrants can take more risks, because the village provides a safety net for them. Ms. Long eventually left her safe job at the university in order to try to run her own clothes shop. She knew that if she failed, she would at least have

the experience, and could go back to the village to live in the house that used to belong to her grandparents, and set up shop in the nearby town. Increasingly, there are cases of rural parents sending money to their migrant children in urban areas, who cannot earn enough to make ends meet, or who might need financial support while between jobs.

ICT serve a crucial role in supporting the ties between the urban and the rural, by bringing images of urban life to the countryside, and by supporting the maintenance of the "networks of intimacy" mentioned in the introduction that rekindle family relations and keep them alive despite the distance. I am not talking about the "relentless connectivity" that Castells et al identify as a key characteristic of the use of ICT, which allows for increased individualism and the creation of communities of choice (Castells, Fernandez-Ardevol, Qiu, & Sey, 2007), nor about the "connected presence" described by Licoppe, where people are in constant contact through ICT in a way that allows them to maintain the feeling of a permanent connection (Licoppe, 2004). On the contrary, I saw little relentless connectivity, and very few regular, ICT-supported interactions between migrant workers and their families back home. What is important is that the connection is available immediately when needed, and that the ICT object itself represents this availability in a tangible manner. Most older farmers who had migrant children always brought their mobile phone with them to the fields, just in case the children called. The 'just in case' was rarely concretized, and calls were more likely to be made on the cheaper landline, but the mobile was a reminder of the urban connection. For migrant workers, ICT provides different ways to remain in touch with village life. Contacts with former classmates through mobile phones or social networks provide a useful network of support for switching jobs (or cities), but even more they provide a feeling of connection and a sense of belonging, whereas the idea of being able to be in touch easily and cheaply with their families in the village gives them a sense of stability in urban lives that are often everything but stable. In a perhaps less personal way, there are bulletin boards and websites that are created by and for migrants who come from the same rural county, which are the modern equivalent of the historical townsmen associations (*tóngxiāng huì* 同乡会) that were founded anywhere there were Chinese migrants (Pang, 2012).

Rather than being the two opposite aspects of contemporary Chinese society, the country and the city are brought closer by the incessant movement between them of people, information, and goods—including ICT goods. Rekindling the personal contacts between the two places might be the most important result achieved by the informatization of the countryside. Whether all this will be rendered useless by the new urbanization and modernization schemes remains to be seen.

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