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the Asian homestead**

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**Technology domestication
in the Asian homestead:
Comparing the experiences
of middle class families in
Beijing, Shanghai and Seoul**

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Introduction

This paper discusses the findings of ethnographic interviews with middle class families in Beijing, Shanghai and Seoul, comparing how they incorporate information and communication technologies (ICTs) into their lives. It analyses how family priorities, cultural values and social pressures influence the ways in which ICT use is woven into their lives, in the process invigorating traditional forms and networks of communication like *guanxi* and *Cheong*. It also discusses the role which mothers play in household domesticating technologies, especially with regard to parental oversight of children's media use.

Technology domestication by families – a review of the literature

The technology domestication framework (Silverstone, Hirsch & Morley, 1992) focuses on the appropriation, objectification, incorporation and conversion of technology in the domestic landscape. Introduced more than a decade ago, this framework was proposed to counter technologically-deterministic perspectives of technology adoption. Utilising a predominantly ethnographic approach, this theory has been effectively used to understand in greater depth the nature of technology adoption and use. Rather than divorcing the technology from its adoptive context, it situates technology within the environments of its users, be it the industrial, corporate, educational or home environment. The application of the technology domestication framework by European researchers has fuelled the production of an extensive, varied and useful body of academic knowledge on how technology impacts European domestic landscapes and familial relations. As the pace of technology adoption accelerates more frenetically throughout Asia, one important area for Science, Technology and Society studies is to understand how ICTs are being incorporated into Asian family life. The technology domestication framework offers us a useful lens through which to study this.

ICTs provide communication links between households and amongst individual household members. They are incorporated and redefined in accordance with the household's own values and interests (Silverstone, Hirsch et al. 1992). The convergence of family dynamics and technologies has been described as the interaction of the 'social space' where family life is played out and the 'technological space' in which household technologies are embedded and used (Venkatesh 1996; Venkatesh, Kruse et al. 2003). Such interaction determines the nature and patterns of technology use that eventually result in the social transformation of the household. Similarly, Kling (1980) argued that technologies acquire meanings in relation to social interaction and family dynamics.

Silverstone (1992:21-26) argued that four processes take place when a technology is introduced into a household, namely 'appropriation', 'objectification', 'incorporation' and 'conversion'. While objectification and incorporation occur within the internal structure of the household, appropriation and conversion extend the boundaries of the household

into the outside world. Through appropriation, people take possession of objects ascribe meanings to them, either consciously or otherwise. Objectification is expressed in how people use and display objects in the home environment and tends to reveal the values of those who feel comfortable with or who identify with these objects. Incorporation refers to the ways in which objects are used and integrated into the daily rituals of the household and the individuals within. Conversion in turn connects the household's moral economy with the public sphere. ICTs exist as both objects of conversion (and conversation) as well as facilitators of conversion (and conversation). Livingstone (1992 :117-123) proposed four additional constructs for understanding the use of technologies in the family: 'necessity', 'control', 'functionality' and 'sociality/privacy'. She argued that because of their different roles and experiences, different members of the household have varying perceptions of technology and this can lead to misunderstandings and tension.

These theoretical constructs help us to understand the impact of ICTs on family and household dynamics. Various dimensions of ICT usage in the household have been analysed. In particular, researchers have focused extensively on the influence of ICTs on family closeness and cohesion. Specifically, computer technology and the Internet have been seen to have both positive and negative influence on family togetherness and interaction. Positive influences of computer technology include enhanced interaction between parents and children (Ferrari, Klinzing et al. 1985). Kuo and Lee (2002) investigated the 'engagement' or 'displacement' effect on other activities as a result of Internet usage and observed that whilst there appears to be a displacement of some activities, Internet use does not affect the time that children spend with their families. Lenhart, Rainie and Lewis (2001) found that while the Internet may not have improved family relationships, it has contributed to family activities through facilitating the planning of activities by email. Negative influences of computer technology include the risk of isolation of certain family members as they get addicted to computers and neglect responsibilities and contacts with others in the family (Hughes and Hans 2001). The concurrently negative and positive influence of ICT usage on family life is also seen in ICTs such as the telephone. While the telephone is sometimes seen as a technology which disrupts family interaction (Frissen 2000), it has been observed that amongst single parents and the young elderly in particular, the telephone helps them to stay connected with friends and relations, thereby preventing them from becoming victims of social exclusion (Haddon 2000).

As for the television, it often occupies a central position place in the living room and provides a place where the family can gather and share each other's company. This ability of television viewing to promote family togetherness can at the same time act as a divisive factor and underscore one's power in the home and mark one's territory (Ling and Thrane 2001). Livingstone (1992) also mentioned that while television used to bring the family around the hearth, new domestic technologies have permitted the dispersal of family members to different rooms or different activities within the same space. Indeed, television viewing is becoming an increasingly solitary activity as children are more likely to watch television alone if they have their own set in their rooms (Bovill and Livingstone 2001). The cultivation of 'bedroom culture' is a growing trend where children and young people spend increasing proportions of their leisure time at home in their own private space where they use their personally owned media rather than using shared media in the communal or family space (Bovill and Livingstone 2001).

Another dimension of the impact of ICT usage on the household is the traditional roles that exist in the family. This phenomenon of role reversal has been studied by Ferrari et al (1985), who noted that the usual instructive influence in families (i.e. parent as teacher and child as pupil) is being replaced with an inverse relationship (i.e. child as teacher and

parent as pupil). Similarly, Lenhart, Rainie and Lewis (2001) observed that teens who are more exposed to new technologies through peers or in school tend to become instigators or teachers to the other members of the family.

Technology diffusion in China and South Korea

Technology adoption in China is keeping pace with the country's economic development. The government places great emphasis on the economy's information sector (Dai, 2003; Meng & Li, 2002), as evidenced by the establishment of the Ministry of Information Industry in 1998 (Zhang, 1999). Chinese people have followed the government's lead by avidly adopting technology and acquiring infotech skills (Leung, 1998). In terms of ICT ownership, affluent urban Chinese households are not dissimilar to those in developed countries. Typically, they own televisions, hi-fi stereos, VCD/DVD players, computers and telephones. They are also trend-conscious and update their electronic equipment regularly. The competitiveness of the workplace has quickened their pace of life and spurred demand for instantaneous communications (Euromonitor, 2003). Residents in Beijing and Shanghai own the most mobile phones in the country, at 27.7 percent and 24.5 percent, respectively (*Mobile phones dominate telecom sector*, 2001). Beijing and Shanghai are also the only two cities with over 20 percent of their residents accessing the Internet, at 28 and 26.6 percent respectively, significantly above the national average of 6.2 percent (Shanghai ranks second in Internet penetration, 2004). This is not surprising given that household computer ownership in the two cities is more than twice the national average (National Bureau of Statistics of China, 2004).

South Korea, hereafter Korea, is a world leader in terms of ICT ownership and access (The National Internet Development Agency of Korea, 2006). 78.5% of Korean households possess one or more computers. Ownership of mobile phones and other wireless devices is also high, at 69.8% of all persons aged 6 or over. Per capita Internet access in Korea is unsurpassed worldwide. Korea has the highest broadband Internet penetration in the world. Internet users access the Internet mainly by 'xDSL' (broadband) mode (89.4%), followed by 'wireless Internet' (27.9%) and 'cable modem' (15.7%). As of June 2005, 71.9% of all Koreans aged 6 or over use wired or wireless Internet at least once a month, and the Internet population is estimated to be 32.57 million. 97.3% of Koreans aged 6 to 19 are Internet users, translating into a population of 9.10 million (The National Internet Development Agency of Korea, 2006). Their Internet use is centred largely around surfing websites, sending email, instant messaging and online gaming. Online gaming is an increasingly popular pastime, especially amongst the young. Massive Multi-Player Online Role-Playing Games, or MMORPGs are especially popular (MacIntyre, 2000).

The urban middle class in China and South Korea – priorities and pressures

An appreciation of the priorities of middle class families in China and South Korea, as well as the pressures which they face, will help to contextualise our understanding of their technology domestication. The two countries' recent economic development has seen the growth of the middle class. Affluent and aspirational, the middle class seeks to raise its status in society and to be financially and materially well-endowed. Such ambitions are individually driven but also socially shaped (Chua, 2000). Hence, the middle class faces the pressure of fulfilling its own life goals and meeting societal expectations.

The emergence of the Chinese middle class was accompanied by a rise in consumerism. The 1990s saw significant growth in personal incomes and ready access to