

Dimensions of Mobile Phone Behaviors in Environmental Communication

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INTRODUCTION

Though the concept of *mobile phone* appeared in a much earlier time, mobile phones as we know them today began being manufactured in 1973 by Martin Cooper of Motorola. In 1977, AT&T presented them to two thousand Chicago customers. Pocket-sized mobile phones came into the market in the late 1990s. The earliest version of mobile phone only provided voice calls in a wireless handset. Short Messaging Service (SMS) and Multimedia Messaging Service (MMS) were introduced later on (Jin & Peña, 2010). During the past ten years, an improved version of mobile phone, the smart phone, expanded the communicative scope of the device. A smart phone usually comes with built-in applications (such as video player, MP3 player, television, and camera) and the ability to access the mobile internet (Wireless Application Protocol, WAP) services (LaRue, Mitchell, Terhorst, & Karimi, 2010); such services allow users to be in constant and instant communication with their family, friends, and colleagues. The latest generation of mobile phone supports complex multi-touch input, gesture-based interaction, advanced soft keyboards, enhanced connectivity, and a great number of dedicated special-purpose applications (Bao, Pierce, Whittaker, & Zhai, 2011). The mobile phone's convenience and potentials along with its dramatically reduced manufacturing cost, lead to its rapidly increasing penetration rate. By 2012, there were more than 6 billion mobile subscribers across the globe, including the third largest user population of more than 300 million in the USA, following China and India. This commu-

nication tool and its saturation rate have created fundamental changes in people's communicative pattern in daily life.

Mobile phone has prominent and distinguishing characteristics compared to other communicational facilities such as landline telephone and laptops. The most basic feature of mobile phone is to provide instant two-way voice communication between any geographical locations with cellular service. Short Messaging Service (SMS), a means to send and receive up to 160-character text message over the handset, also offers a platform where messages can arrive automatically without proactive action. Furthermore, mobile phones are relatively inexpensive and portable and have a good battery life. Because using mobile phone does not require a high degree of user technical proficiency, nor does it rely on landline telephone infrastructures, interaction via mobile phone enables users to develop unique communication patterns. In short, the small wireless device offers more mobility, flexibility, and freedom to (Claudia & Anamaria de, 2012), and implicit interaction with (Cowan, Griswold, Barkhuus, & Hollan, 2010) its users. Besides offering the typical features of face-to-face communication, mobile devices could also be used as pathways to anonymity and individualism which allow greater opportunity for transgressing moralized social roles (Maroon, 2006), and as tool to circumvent oppressive or intimidating situations (Gordon, 2002).

Environment was originally defined as place or thing that is separate and distant from humans and their cultures (Dawson, 2009; Hendry, 2010). Till the early 1960s, the term environment started to

be associated with a particular public conversation about problems of the relationship between human and the ecosystem they are in (Hansen, 2010). Generally, environmental issues can be sorted into three categories. One category includes nature driven environmental issues which are clearly separate from human activity, such as landslide, hurricane, earthquake, and ozone depletion. The second category contains environmental problems resulted from ongoing interactions between human and nature, such as global warming, natural resource conservation, land use management, and deforestation (Tilman & Lehman, 2001). The third category reflects human activities based on but independent of nature, such as biotechnology development, genetic modification technology, and nuclear power plants (Wang, 2013).

Environmental communication finds its basis in an urgency to better understand and translate human relationships with the rest of the nature (Jurin, Roush, & Danter, 2010). Cox (2006) defined environmental communication as a study of ways in which people communicated about the environment, the effects of this communication on people's perspectives of both the environment and themselves, and therefore on people's relationship with the natural world. Some scholars also described environmental communication as the systematic generation and exchange of humans' messages in, from, for, and about the world around us and our interactions with it (Jurin et al., 2010) in order to enhance environmental literacy and sustainable practices (Pillmann, 2000). The above-mentioned definitions addressed the interactive perspective of environmental communication, but failed to recognize the participatory perspective of the concept. For this reason, the author proposes to define environmental communication as the study and practice on how people communicate about the environment and human interaction with the environment in order to facilitate public participation in environmental protection or decision-making process.

The use of mobile phone in environmental communication process is still a relatively new field of research for both computer scientists and communication scholars, as the literature of this domain was created just a decade ago. It is therefore plausible to regard those who made the first scholarly contribution to the field as the pioneering figures in the field, and those who published most journal articles and most read books as leading scholars. Based on this measuring instrument, Drs. Gertraud Peinel and Roberto San José at Technical University of Madrid in Spain, and Dr. Thomas Rose at RWTH Aachen University in Germany (Peinel, Rose, & San Jose, 2000) are the scholars who first suggested using mobile phones and other mobile devices for the dissemination of environmental information. Dr. Dan Saugstrup at Technical University of Denmark and Dr. Anders Henten at Aalborg University in Denmark (Saugstrup & Henten, 2003) are also among the pioneering scholars who bridged the mobile phones with environmental protection activities by proposing a methodological approach to the analysis of user need with respect to mobility.

There is also a group of leading scholars who have been continuously contributing to the field. Dr. Anders Hansen in University of Leicester in the U.K. is among the leading scholars in the field, as his work (2010) on how new media (i.e., the Internet and mobile phone) could help organize environmental campaigns has been the most cited and discussed by other communication scholars. Dr. Robert Cox (2006) in University of North Carolina at Chapel Hill in the U.S. is another leading figure in the field for his exploration of the interaction between media system and environmentalists. Dr. Howard Rheingold (2008) in Stanford University in the U.S. is another driving mind in this new field. Dr. Rheingold published many books describing the evolution of our societies brought by mobile devices.

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