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50P. Young Adults’ Social Life through Mobile Phones: A Space-Time Model

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Abstract
Mobile phones represent one of the most pervasive technologies of our time. This technology not only makes possible communication at a distance but also creates a communicative environment that enables the transportation of social life within the space-time system. Since young adults have largely embraced mobile technology for their everyday activities, this research proposes a model for understanding how individuals in the 18-24 years old age bracket realise their social life through mobile phones. The proposed model represents social life in a space-time system, which reflects the transit from co-presence to tele-presence, juxtaposed to the communicative environment. The model, which needs to be empirically tested through a canonical correlation analysis, will shed light on how the communicative repertoire is managed by young adults and how they pass from co-presence to tele-presence.

Keywords
Mobile phones, young adults, communicative environment, social life, space-time system

1. Introduction
What distinguishes human beings from animals above all is the communicative capacity, which allows us to turn existing information “into new insights, symbols, or representations meaningful to others with whom we converse” (Benkler, 2006, p. 52). For many centuries, proximity was a requirement to make possible oral communication between two or more individuals. It was not until the beginning of the ninetieth century, with the emergence of the electric telegraph first, and then towards the end of the ninetieth century, with the appearance of radio and telephone technologies, that the communicative capacity between far-away individuals was made possible. These technologies evolved further to the point that not only realised the communication between distant but also movable persons: mobile phone technology. It liberated both the senders and receivers from being stationary in order to establishing the communication. These days we enjoy an ample “communication repertoire” (Haddon, 2005) and can easily jump from face-to-face interaction, to communication through what we call now a fixed-line telephone, to phone calls and short message service (SMS) via mobile phones, not to mention different means of communication through the Internet. We are living an era where convergent technologies facilitate communication and allow remote interaction – cf. “technological affordances” (Wellman et al., 2003). And the essential technological affordance of the mobile phone is ubiquity (Castells, Fernández Ardèvol, Qiu, & Sey, 2007).

Since its commercial introduction in the early 1990s, mobile phone technology has expanded rapidly across the globe. Nowadays, it is estimated that 60% of the world population have access to a mobile telephone (International Telecommunication Union, 2008). Even though
the changing figures of mobile phone users, there is a recognisable pattern: young adults represent the keenest age group on using cell phones; moreover, there is even a growing concern that mobile phone usage is becoming an addiction among adolescents. In the United States, the mobile phone users between 18 and 24 years old are regarded as “the cellular generation”, who consider the cell phone as part of their everyday lives (comScore, 2007). In New Zealand, where this study is being conducted, 90% of those in the 15-24 years old age bracket had a mobile phone for personal use as December 2006 (Statistics NZ, 2007).

Although some disparities still persist in terms of mobile penetration, there is no doubt that mobile phones are now a common means of communication. These days, it is not uncommon to see individuals using their mobile phones while doing their routine activities and also in some circumstances and places where the use of mobile phones can be considered inappropriate like in the movie theatre, in the classroom or in the church.

The fact that mobile users are always – or almost always – available to interact with their contacts have made them “snails in the sense that [they] carry [their] relational house in the back” (Fortunati, 2005, p. 217). Katz and Aakhus (2002) coined the word “apparatgeist” to emphasise the notion of perpetual contact, which expresses the role personal communication technology plays in people’s lives.

Yet, when we use mobile phones we are bounded in a space-time system.

2. The space-time system

Before introducing the temporal element, the distinction between place and space needs to be explained. On the one hand, place is more than just the actors having face-to-face encounters; places are socially constructed and every place reflects its own social practices (Harvey, 1993) – e.g., a stadium, where thousands of non-acquaintances follow certain rituals in a relatively coordinated fashion. On the other hand, space can be interpreted in a broader sense recognising the relationship among absents – e.g., the stock market, where investors transact considerable amounts of money without necessarily being physically there.

The co-existence of social interactions constitutes the social space (Barker, 2003). Therefore, understanding how human activity occurs in space, while paying attention to the dynamic nature of social relations, is critical to analyse social life (Giddens, 1984). Space is where social practices take place; it “is the expression of society [and] provides the material support of time-sharing social practices” (Castells, 2000, pp. 440-441). This should not be interpreted as activities taking place in contiguity only; coordinated social activities can be performed at a distance too. Absent actors can still make manifest their status and power in a “spaceless place” by the use of new technological tools (Ogden, 1994). For instance, the portrayal of university lecturers’ publications, presentations and teaching are on their websites projects an image of who they are. Furthermore, it is the social proximity – rather than the geographical one – of the network of relationships what defines the “social time” (Green, 2002).

Both physics and social sciences recognise the nature of the inextricable relationship between space and time. Physics teaches us that time cannot be separated from and be independent of space; they both conform a four-dimensional object called space-time, whose points are events (Hawking & Mlodinow, 2005). Sociology also observes that space and time are interlinked; they provide the framework to understand social action (Harvey, 1990). Changes in any of these pair of elements affect the other one (Giddens, 1990). Both physical and social events take place in the space-time system. Almost four decades ago, Toffler (1971) observed that the duration of our relation with things, places, people, organisations and ideas were shrinking and challenged us to leave behind what he called a “Newtonian view of the
universe” (p. 58), whereby time goes by over a fixed place, and embrace an “Einsteinian” approach, where we should accept the transient nature of the relationship between humans and our outer world.

2.1. The mobile phone in the space-time system

Both the traditional fixed-line telephone and the mobile phone are technologies designed to make possible the communication among individuals physically separated, rendering distance insignificant. As Gillespie and Williams (1988) reasoned: “When the time taken to communicate over 10,000 miles is indistinguishable from the time taken to communicate over 1 mile, then ‘time-space’ convergence has taken place at a fairly profound scale” (p. 1317). While the written text and the fixed-line telephone make possible action at distance, the mobile phone epitomises this attribute (Cooper, 2002). The massive protest in the Philippines in 2001, when thousands of demonstrators were summoned in central Manila via text messages to express their disapproval against corrupted practices in government (Rheingold, 2002), illustrates this point.

Furthermore, the mobile phone is unique in making possible “micro-coordination” (Ling, 2000); that is, the precise adjustments of activities across spatial distance while people are on the move. A case in point is Al Gore’s withdrawal of his early concession to George Bush in the aftermath of the 2000 presidential election in the United States once his campaign manager learnt via mobile phone that the margin between the two candidates was slim while Gore and his entourage were on their way to the planned public concession (Norris, 2001). Although the consequences might not be as dramatic as the previously illustrated, micro-coordination among young mobile phone users occur every day. When they agree to meeting up, say in a mall, it is not until they are in the shopping centre that they contact each other to determine the exact location of the imminent gathering – cf. “flexible rendezvousing” (Castells et al., 2007).

The ways mobile phones are used reveal an evolution from mobility features to connectivity features. Ubiquitous connectivity becomes the fundamental process that redefines the space where social interactions take place (Castells et al., 2007) – cf. Gergen’s (2002) notion of “perpetual connection”. This redefinition presents the paradoxes that mobile technology brings into our social interactions in the time-space system where two worlds, both the vicinity and the remote, intersect (Schegloff, 2002). Green (2002) points out the contradiction existing in the mobile phone communication by which “social space and time are extended [and simultaneously] remain locally continuous” (p. 291) since the possibility of social interaction is not restricted to the mobile phone owner with someone else in a distant location but could also involve those in the vicinity. Along these lines, Weilenmann and Larsson (2002) have identified two forms of social interaction by sharing mobile phones: 1) “minimal form of sharing”, when only the transmitted information is shared – e.g., showing a text message on the small screen to associates who are in the surrounding area; 2) “hands-on sharing”, involves the phone actually being handled by more than one person – e.g., allowing someone else to take a call on one’s mobile phone.

Furthermore, the way mobile phones are used goes beyond just a functionalist approach; it is the social and cultural context what defines how mobile communication is managed. After tracing mobile phone use among youth Japanese, Ito (2005) reveals that instead of disrupting the existing social norms in different places, mobile users create their own communicative space that accommodates to the existing, rather rigid, restrictions in place. The use of mobile phones in the classroom, where mobiles are allegedly not allowed, exemplifies the adaptive process of establishing a communication channel within an uninviting environment.
2.2. Social practices using mobile phones in the time-space system

While mobile phones may reflect the user’s personal tastes conforming gratification purposes (Katz & Sugiyama, 2005) and can satisfy esteem and expression needs (van Bijljon, Kotzé, & Renaud, 2008), the focus of this research is in how social practices are being adjusted by the use of mobile phones in the time-space system. I propose analysing the mobile as a social device, which makes possible the communication among socially interconnected individuals. The ultimate goal is discovering the factors of the communicative environment that influence the transition of social practices from co-presence – interaction in the vicinity – to tele-presence – interaction across distance – when using mobile phones.

For some young people not owning a mobile is equivalent to not being part of the social network because the exchange of information continues well beyond the contiguous and regular interaction with their circle (Ling, 2000). For instance, when I asked my 17-year old son why he uses his mobile phone to maintain contact with his friends with whom he has just shared most of the day at school his natural answer was: “There is much going on during after-school hours and I want to keep up with my mates”. Indeed, it seems that owning a mobile became a mix between sentiment, interest and obligation (Gergen, 2002).

Of course, examples of how mobile phones are changing social practices among young adults are not restricted to my household only. Some time ago, I saw a girl, who was talking on her mobile at the bus stop, took the same bus as me and maintained the phone conversation until I got off the bus about 30 minutes after I spotted her for the first time; she looked absolutely absent-minded of what was happening in her surroundings. In some other occasions, I could overhear mobile phone users informing their interlocutors about the points we were passing by as the bus was moving along, coordinating the weekend activities and even once I could hear a young man complaining about his partner’s lack of affection towards him. They all seemed oblivious of people in their proximity; the other passengers and I had just not been invited to their private conversations and whether we became knowledgeable or not of the topics they were talking about was not of their concern all. It reveals the freedom of holding a more or less intimate conversation in front of strangers. Their inner self become, to some extent, public blurring the line between “front-stage” and “back-stage” (cf. Goffman, 1971).

Another puzzling observation is the use of mobile phones to send texts from home. It may sound counterintuitive if one considers the rather cumbersome task of engaging in a quick sequence of messages exchange from a tiny keyboard instead of using the landline phone, which is at arm’s length distance and is paid on a flat rate schema. Would not it be easier just to pick up the phone and start a real conversation? Do young adults feel freer communicating using their mobile phones rather than the house landline phone? This behaviour not only reflects a competency in the use of information and communication technology tools but also symbolises a sedentary use of the mobile phone – a technology whose ultimate advertised advantage was to provide communication anywhere anytime.

The aforementioned observations suggest that young adults have integrated the use of the mobile phone into their routine – cf. Green’s (2002) “rhythms of mobile use in everyday life”. Moreover, it hints that they are creating their own social space-time system by using mobile phones, where their face-to-face interactions, instead of being negatively affected, seem to be revitalised (Gergen, 2002). It needs to be noted that this invigoration of the social interaction in the space-time system is ubiquitous.

3. Tele-presence and the communicative environment

The central argument of this study is that the communicative environment modify social activities in the space-time system, detaching the individual from co-present interaction to

3.1. Tele-presence

In virtual reality studies, the multidimensional nature of tele-presence – or just presence – has been recognised. Lombard and Ditton (1997) define presence as the “perceptual illusion of nonmediation” and discuss six different conceptualisations of the term. The one that is relevant for this study is tele-presence as transportation.

Tele-presence as transportation reveals two elements: 1) the individual nearness to his/her communication partner at the other end of the line and 2) the individual detachment from his/her physical surrounding. These two elements are complementary in shaping the state of tele-presence. In this sense, tele-presence becomes a social construction where the communication partners experience the feeling of being together and, simultaneously, they cut off their links to what is going on in their contiguous locations. Since these two elements are subjective and can only be reported by the individuals experiencing it (Schubert, Friedmann, & Regenbrecht, 2001), the participants of this study have been asked to quantify these elements of tele-presence when using mobile phones.

On the one hand, previous research suggests that experiencing nearness of communication partners – in other words, the feeling of being together – can be achieved by using telephone technology (Ijsselsteijn & Riva, 2003). On the other hand, the examples presented in section 2.2 above illustrate how the individual feels completely removed from what is going on in his/her surrounding, where “the stranger becomes the depository of the most intimate secrets and the most delicate information” (Fortunati, 2005, p. 216). Riva and Mantovani (2000) convincingly argue that the criterion of the validity of tele-presence is given by the social context within which actors exploit the technological affordances rather than simply replicating the physical conditions.

It is needed now to identify the components of the communicative environment that shape tele-presence.

3.2. The communicative environment

The communicative environment is managed and shaped by young adults when using mobile technology (Green, 2002). The communicative environment encompasses three elements: place of the communication, communication partner and topic of the communication.

With the introduction of mobile phones, the wish for telecommunication on the go was realised. It made possible to be independent of the fixed-line telephone, giving the opportunity of moving around while talking on the phone – only restricted by the area of coverage. Furthermore, mobile phones are used now not only while moving between two different places but also while staying in determined places where one has no access to a fixed telephone. This observation reflects the shift from mobility to ubiquity when using mobile phones (Castells et al., 2007). Consequently, the first hypothesis of this study seeks to analyse the effect of where the communication takes place on tele-presence:

\[ H_0: \text{The place of the communication affects the individual’s experience of tele-presence} \]

The place where the communication takes place may include diverse locations like public transportation, home, classroom, shop, church, or public areas.

It is recognised that level of interaction the individuals have in both real and technology-mediated environments affects tele-presence (Riva & Mantovani, 2000). The degree of
affection and familiarity or the expectation the individual has on the communication partner can make the phone conversation more or less intense. The second hypothesis of this study reflects the role played by the communication partner on tele-presence:

\[ H_0: \text{The communication partner affects the individual’s experience of tele-presence} \]

The communication partner could be friends, parents, loving partners and classmates, among others.

The communication using mobile phones is undertaken not by isolated individuals but by individuals who are part of a larger context (Riva & Mantovani, 2000). Understanding what topics are the mostly freely discussed by individuals when exploiting the available mobile phone technology, regardless of the presence of strangers in the surrounding, will allow us to understand the transition to tele-presence.

\[ H_0: \text{The topic of the communication affects the individual’s experience of tele-presence} \]

The topic of the phone conversation may include a diversity of subjects, which may range from birthday’s greetings to fixing the price of a transaction.

4. Methodology

Based on previous research and my own observations, the research problem hypothesises that by using mobile phones a spatial-temporal disjuncture is produced. Since the research problem involves identifying the hypothesised latent relationships between the three identified elements of the communicative environment and the two dimensions of tele-presence, a canonical correlation will be applied. The canonical correlation model to be analysed is the following:

\[ Y_1 + Y_2 = X_1 + X_2 + X_3 \]

Where the dependent canonical variate, tele-presence, is given by:

- \( Y_1 \): nearness of the communication partner
- \( Y_2 \): detachment from physical surrounding

And the independent canonical variate, communicative environment, is given by:

- \( X_1 \): place of the communication
- \( X_2 \): communication partner
- \( X_3 \): topic of the communication

Figure 1 depicts the model to be analysed:
Data have been collected between November and December 2009 using an anonymous survey (see Appendix 1) distributed among individuals aged between 18 and 25 years old in a New Zealand university. A total of 111 questionnaires were obtained; however, only 82 are to be included in the analysis due to incomplete questionnaires or participants out of the selection criteria. The final sample size of 82 is well above of the at least ten observations per variable to avoid overfitting the data (Hair Jr., Anderson, Tatham, & Black, 1998).

Table 1 summarises participants’ demographic information.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>55</td>
<td>67.1%</td>
</tr>
<tr>
<td>Male</td>
<td>27</td>
<td>32.9%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Main occupation</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student</td>
<td>74</td>
<td>90.2%</td>
</tr>
<tr>
<td>Employee</td>
<td>6</td>
<td>7.3%</td>
</tr>
<tr>
<td>Both student and employee</td>
<td>2</td>
<td>2.5%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Marital status</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>68</td>
<td>82.9%</td>
</tr>
<tr>
<td>De facto relationship</td>
<td>10</td>
<td>12.2%</td>
</tr>
<tr>
<td>Married</td>
<td>4</td>
<td>4.9%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mobile was</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bought</td>
<td>48</td>
<td>58.5%</td>
</tr>
<tr>
<td>Received as a gift</td>
<td>31</td>
<td>37.8%</td>
</tr>
<tr>
<td>Provided by the company</td>
<td>2</td>
<td>2.5%</td>
</tr>
<tr>
<td>Borrowed</td>
<td>1</td>
<td>1.2%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mobile phone plan</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-paid</td>
<td>67</td>
<td>81.7%</td>
</tr>
<tr>
<td>Post-paid</td>
<td>14</td>
<td>17.1%</td>
</tr>
<tr>
<td>N/A</td>
<td>1</td>
<td>1.2%</td>
</tr>
</tbody>
</table>

5. Anticipated contribution

Since young people have enthusiastically embraced the use of mobile phones – there is even a growing concern that is becoming an addiction among adolescents, having a deeper insight on their communication patterns through the elements of the communicative environment will shed light on how social life is transferred from co-presence to tele-presence and the underlying causes of this transformation as well as on how young adults’ communicative repertoire that mobile technology makes possible is managed.

6. References


7


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