13. INFORMATION AND COMMUNICATION TECHNOLOGIES – MEDIATED RELATIONAL MAINTENANCE AND MARITAL QUALITY

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Introduction

In spite of the overwhelming new ideologies on how to live one's life, marriage is still a prominent event in an adult's life in almost every culture in the world. Quality of marriage has always been an interesting topic of discourse either for scholars of family and interpersonal studies or for most ordinary persons who experience it everyday. This intriguing topic had taken an important place very early in the history of family studies. Terman, Butterweiser, Ferguson, Johnson, and Wilson (1938, as cited in Gottman and Notarius, 2002) started the quest of marital quality research by raising one major research question, namely, "What is fundamentally different about happily and unhappily married couples?" Marital happiness, although not necessarily identical with marital quality, remains as an essential part of marital quality concept until now. Spanier and Lewis (1980) proposed marital quality as the single greatest predictor of marital stability. They noted marital quality as the process that took place in a marriage relationship, while marital stability relates to the outcome. A year later, they reinstated that the definition of marital quality does not convey a fixed idea of discrete categories of high and low, but rather a continuum that ranges from high and low. Analyzing ten years of literature within the field of marriage and family, these scholars concluded that quality of marriage involves multidimensional phenomenon governing marital interaction and marital functioning. Gottman and Notarius (2002) supported this claim by stating that by the end of the 20th century, one of the most important core content areas in family research is marital interaction, especially with its relationship with overall family well-being. Marital interaction is also an important aspect of marital quality, which in fact some authors believe as more influential than marital satisfaction or happiness in determining the level of marital quality (Karney and Bradbury, 1995, as cited in Adler-Baeder, Higginbotham, and Lamke, 2004).

Despite its attractiveness in family studies research, the concept of marital quality itself is still debatable. Some scholars view it as mainly fall within the domain of marital satisfaction (Fincham and Bradbury, 1987, as cited in Amato, Johnson, Booth, and Rogers, 2003; Russell and Wells, 1994, as cited in Hassebrauck and Fehr, 2002), while some others take it as a broad concept which encompasses marital satisfaction or marital happiness, marital stability, and marital quality of interaction (Spanier, 1979, as cited in Young, 2004; Amato and Booth, 1997, as cited in Amato, Johnson, Booth, and Rogers, 2003; Flora and Segrin, 2003; Amato, Johnson, Booth, and Rogers, 2003). In addition to marital satisfaction, Weigel and Ballard-Reisch (1999) proposed somewhat differently two other determining factors in quality of marital relationship namely commitment and love. For the purpose of this study, marital quality of interaction will be the focus of interest, given its importance and its ability to capture real situation from marriages,



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which will reveal somewhat objective measure of couples' marital quality, as compared to more subjective assessments of marital satisfaction and marital stability. This focus area would be more appropriate as this research will examine the pattern of information and communication technologies (ICT) usage as communication tools to maintain marital relationship, which is highly resemblance of marital interaction if not identical in nature. By focusing exclusively on marital relationship quality, it is designed that the 'actual-objective' pattern of relational maintenance would be put as one of research objectives, with no necessity to explore the 'experienced-subjective' part of relational maintenance.

"All relationships require maintenance behaviours or else they deteriorate" is the first and basic proposition of relational maintenance framework (Canary and Stafford, 1994) which basically proposed the importance of maintenance behaviours in any relationship particularly in such intimate relationship like marriage. They defined maintenance behaviours as actions and activities used to sustain desired relational definitions. Relational definitions are seen in the characteristics of control mutuality, trust, liking, and (in romantic relationships) commitment. Satisfaction and love are also considered to be essential to build relational quality. Moreover, another important notion from Canary and Stafford (1994) is that such relational maintenance can be done in various ways, which stated in another proposition "Maintenance behaviours may be used in isolation or in combination with other maintenance behaviours to variously affect the nature of the relationship." Implication of this proposition is that whatever maintenance behaviour taken using any possible media might influence the marital relationship; hopefully it will lead to relationship enhancement, thus improve the marital quality.

Given the necessity of using as many as possible ways to maintain relationship, the advancement of information and communication technologies (ICT) could be an answer to this issue. Its rapid growth is usually attributed to simultaneous result of innovation from computer and cell phone industries. Striking ICT expansion is particularly made possible by the introduction of internet which drives this technology to be acknowledged as the most powerful ICT nowadays. According to the data from Internet World Stats (2008), the internet usage has increased dramatically up to 265.6 % from 2000 to 2007; with 20 % of the population worldwide have used internet in 2007. North America has the highest internet users percentage (71.1 % of population), followed by Oceania/Australia (57.1 %) and Europe (43.4 %). Africa is the area which has lowest internet users percentage compared to the population (4.7 %) but they are now in a remarkable usage growth pace with up to 882.7 % usage growth from 2000 to 2007, the second in the statistics after Middle East with 920.2 % usage growth.

Contribution of cell phone which provides a wide range of communication features with more affordable prices is also significant. Although it's not as powerful as the internet, cell phone remains a less sophisticated tool which is friendlier and widely used around the world. The cell phone usage has increased dramatically within the period of 2000 to 2005 (Computer Industry Almanac, 2006). There were 388 cell phone subscribers per 1,000 people in US then increased up to 683 cell phone subscribers per 1,000 people or 176.03 % growth. West Europe has 149.69 % growth, whereas Asia-Pacific has the most

progressive growth up to 323.94 % of increment. The trend of cell phone usage worldwide is reported to reach the level of 259.35 % growth from 2000 to 2005.

Similar trend could be observed in the context of Malaysia. Data from Malaysian Communication and Multimedia Commission (2007) indicate that the penetration rate of broadband subscriptions has increased by close to 95 % from 2005 to 2007, from 1.9 to 3.7 per 100 inhabitants, whereas the increase of internet dial-up penetration rate reaches 677.8 % growth from 1.8 % in 1998 to 14 % in 2006. The raise of cell phone usage can also be seen from the statistics. It has been found that cell phone usage reaches 72.3 % of Malaysian population in 2006, or 745.4 % of growth as compared to only 9.7 % of population in 1998.

A noteworthy recent finding which pinpoints the social nature of ICT use has been highlighted by the research done under PEW Internet and American Life Project (2007). This study examined the attitude, pattern, and intensity of ICT use in the US. Despite the fact that entertainment functions were rated among the most important ones, it is our particular interest that there is a highly-rated social interaction function done by internet users, which is "send instant messages to someone who is online at the same time." The wide usage of cell phone is also supported by the survey results, which reveal that the most popular digital activity of the respondents is sending or receiving text messages on cell phone, leaves other activities behind, including playing video game, listening to the radio, and watching TV shows or news programs.

However, concerns pertaining to ICT use in relationships have been raised by some scholars such as Stafford, Kline, and Dimmick (1999, as cited in Wei and Lo, 2006) who proposed that the physical presence of two interactive parties should be assumed to be the ideal relationship. Similar notion from Teske (2002) points out that the shift in people's meaning on technological culture could erode social interconnectedness and lead to individual psychological fragmentation. Though it is believed that the internet could open much wider opportunities for people to communicate with greater flexibility because of its anonym and controllable nature, the negative effects are considered to be more detrimental to the development of the society.

Despite some concerns abovementioned, some other more so-called balanced views are also noted. An excellent synthesis from Boase and Wellman (2006) could give a comprehensive picture of the overall status of research in the area of internet and personal relationships. Longitudinal studies conducted between 1995 and 2003 show that there is a positive association between internet use and offline interaction with close friends, but not with family (Shklovski, Kiesler, and Kraut, in press, as cited in Boase and Wellman, 2006). E-mail can strengthen friendships because it acts as an extra stimulus reaffirming the established relationships. Since friendships are more fluid, it requires some active efforts to maintain them, and e-mail can serve that function well. Family relationships, as compared to friendships, are more stable in nature and more often involve routine interactions. This is especially true when family members share the same living space. These relationships tend to benefit less from e-mail exchange, because much of the interactions occur during everyday routine. For families who their members live separately, e-mail

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and internet-mediated communication in general, might be beneficial to keep the level of their interactions. It can be attributed to some unique technical characteristics of internet communication (Bradner, Kellogg, and Erickson, 1999, as cited in Boase and Wellman, 2006), such as: (1) its distance-independent in use and cost that makes it affordable but effective enough for every family, (2) its asynchronous nature that makes family members prompted to communicate at their convenience, and (3) its rapid speed connection that makes news and personal matters can be communicated within a short period of time.

Given the importance of quality in marital relationship and diverse arguments related to ICT use in relationship maintenance, the focus of this study is to explore ICTmediated relational maintenance and marital quality among married individuals. Although earlier research suggests that there are some benefits of such relational maintenance towards personal relationships, it is fruitful to examine the routine use of ICT by married individuals. It is not necessarily for those who live separately from their spouses only, but also for married individuals in general in their every day lives. That is why the scope would not be limited only to internet use which is usually very helpful for couples separated by distance, but it will be taken together with cell phone usage which is typically more handy and practical for daily use for married individuals who still share the same living space with their spouses, but need tools to fill the gap in their communication needs due to their different pattern of daily activities.

Literature Review Marital Quality

What is marital quality? Different scholars with different points of emphasis have tried to answer this question. One of the most cited works in this issue is from Fincham and Bradbury (1987, as cited in Fincham and Linfield, 1997) that defines marital quality in terms of a spouse's sentiment as reflected in subjective, evaluative judgments of the marriage or partner. This one-dimensional definition is usually referred as satisfaction aspect of marriage, as also proposed by Dainton, Stafford, and Canary (1994) that marital satisfaction is a global assessment of the state of relationship and is often viewed as one's attitude towards the partner and the relationship. This construct might also be referred as marital happiness by some other authors (e.g. Amato, Johnson, Booth, and Rogers, 2003).

A different way to understand marital quality came from work of Spanier. According to Spanier (1979, as cited in Young, 2004), quality of marriage should be differentiated into two points of view i.e.: marital stability and marital quality. Marital stability refers to whether a marriage ends by death, divorce, separation, desertion, or annulment. A marriage can be considered as stable if it is terminated by natural death of one's spouse. Marital quality is more concerned to the functionality of marital relationship and subjective evaluation of a married couple's relationship. We could analyze further that the concept of marital quality from Spanier's point of view consists of two lower-level aspects that is quality of interaction and satisfaction comes from that interaction.

Another different conceptualization of marital quality from Amato, Johnson, Booth,

and Rogers (2003), stated that marital quality should be viewed as multidimensional. Together with marital happiness, they used marital interaction and divorce proneness as aspects in measuring marital quality. In their study, *marital interaction* referred to frequency of shared activities, whereas *divorce proneness* as thought or actions that may lead to divorce. If we were to apply Spanier's framework, divorce proneness might be considered as part of marital stability.

Given three different approaches to marital quality, this study focus only on the quality of marital relationship, which to some extent is closest to Spanier's definition of marital quality. Marital satisfaction would not be included in the study while marital quality of interaction would be scrutinized later on. The importance to study marital quality of interaction is in fact has been suggested by previous research. Hassebrauck and Aron (2001) cited works from earlier works showing that a satisfactory close relationship is a major component of most people's general satisfaction with life and subjective well-being (Campbell, Sedikides, & Bosson, 1994; Russell & Wells, 1994). Accordingly, problems in marriages and marriage-like relationships may have severe consequences for physical and/ or mental health (Mayne, O'Leary, McCrady, Contrada, & Labouvie, 1997; Traupmann & Hatfield, 1981; Wickrama, Lorenz, Conger, & Elder, 1997; as cited in Hassebrauck and Aron, 2001).

The Role of Relational Maintenance in Marital Relationship

One of the interesting issues in family studies research is to determine factors that discriminate happy long-lasting marriage and stressful short-lived marriage. Weigel and Ballard-Reisch (1999) believe that some couples must have been interacting in certain ways to maintain or preserve their relationships, but not for the others. Communication clearly plays a role in the maintenance of relationships. Communication is the heart of any intimate relationships. The ability to communicate is one of essential skills that individuals have to master in order to enjoy close relationships (Olson and DeFrain, 2006). Researches suggest that satisfying communication goes hand in hand with satisfying and strong marriage. Strength of communication can be considered as the discriminating factor that differentiates happy and unhappy marriage (Olson and Olson 2000, as cited in Olson and DeFrain, 2006). The opportunities to share ideas, to express feelings, to be appreciated, and to be listened to, are some important features among characteristics of strong couple communication. It is a transactional process in which individuals create, share, and regulate meaning requires some level of inter-subjectivity (Segrin and Flora, 2005), shared meaning or a state where a person understands the other and is understood by the other.

Canary, Stafford, and Semic even go further by proposing that (2002) the ability of spouses to maintain their relationships is the building blocks of marital resilience. In this context, resilience is not exclusively related to situation of turmoil or crisis, a position which is generally taken in resilience studies, but on the contrary it is attributed to day-to-day tasks and normative stressors. Marital resilience implies a process undergone by spouses to purposefully engage in maintenance strategies — activities to repair, sustain,



and go on with their relationships (Canary & Stafford, 1994). That is why the interest of Canary, Stafford, and Semic (2002) in their research was the daily, garden-variety maintenance of relationships in response to daily challenges.

Theories and research suggest that maintenance strategies could help to promote relational resilience (Canary, Stafford, and Semic, 2002). Maintenance strategies would help to prevent decline in intimacy (Dindia, 2000; Duck, 1994), maintain and even increase the existing level of intimacy (Guerrero, Eloy, and Wabnik, 1993), especially after going through troubled times (Dindia & Baxter, 1987). With regard to intimate couples, love turned out to be positively correlated with the use of maintenance behaviours (Dainton, Stafford, and Canary, 1994; Weigel and Ballard-Reisch, 1996; as cited in Weigel and Ballard-Reisch, 1999). The crucial position of relational maintenance is to keep already initiated contacts among people and determine whether the relationships will be terminated or continued (Ye, 2006). Its strategic role in virtually all kinds of relationship is the reason why relational maintenance has been a focus in relationship research in the last three decades (Dindia, 2003, as cited in Ye, 2006).

Relational Maintenance

The concept of relational maintenance was originated from the work of Canary and Stafford, and has been researched by scholars under varied themes of study. *Relational maintenance behaviour* is defined as actions and activities used to sustain desired relational definitions (Canary and Stafford, 1994). This definition implies that people engage in actions and activities to maintain their relationships whether in the form of strategic or routine practices. The word 'sustain' means maintenance behaviours are not only for keeping a dyad together but also to enhance desired relational definitions – salient features that indicate the character of relationship. Canary and Stafford (1994) mentioned control mutuality, trust, liking, and commitment as vital to personal relationships.

Some propositions have also been stated by Canary and Stafford (1994) to highlight some important assumptions in their framework. The first proposition is "All relationships require maintenance behaviours or else they deteriorate". This implies that whatever type of relationship that people have, regardless of their initial or baseline level of relationships, performing maintenance behaviours would keep the level of relationships as the present level or even increased. On the other hand, not doing maintenance behaviours would lead to decreasing level of relationships or even worse, the relationships might vanish. The second proposition is "People are motivated to maintain equitable relationships than inequitable relationships". Equity is always an issue in any relationship. The better the equity fulfilled by a relationship, the greater will be the likelihood of that relationship to be maintained, and relational maintenance behaviours play roles in adjusting equity in the relationship. The third proposition is "Maintenance activities vary according to the development and type of the relationship". This notion might be in line with developmental perspective where developmental stages would demand different pattern of adjustment. As the couples develop from dating, getting marriage, having the first child, and go through stages of family development, they must somehow use different style of relational

maintenance strategies. Even changes within one particular stage (i.e. new job, promotion, new house, etc.) might demand different maintenance behaviours.

The fourth proposition of relational maintenance framework is "Maintenance behaviours may be used in isolation or in combination with other maintenance behaviours to variously affect the nature of the relationship". The more various the maintenance behaviours the better the relationship will be. Earlier, Canary and Stafford (1994) proposed the importance of varying the types of maintenance behaviours, but in this study the variation doesn't come only from the types but the media used is the primary one. It will observe ICT use to complement the so-called conventional face-to-face relational maintenance behaviours. The fifth proposition is "Maintenance actions and activities involve both interactive and non-interactive behaviours." Although some portions of maintenance behaviours are more interactive or communicative in nature, some other portions are less interactive but more psychological or contextual. The final or sixth proposition is "People use both strategic and routine interactions to maintain their relationships." Those two modes of maintenance should be performed simultaneously, though couple's preference, habit, and actual situation might require some behaviours to be more important and used frequently to maintain their relationship.

Strategic and Routine Maintenance Behaviours

Canary and Stafford (1994) believe that both strategic and routine behaviours are necessary in maintaining relationships but routine patterns are considered to be more habituated and somewhat less conscious. People might engage those *routine behaviours* without even realizing the process 'why' they choose particular behaviours and 'how' they do it. They are more automatic in nature but yet the goals in terms of relationship maintenance are achieved. Despite the availability of routine behaviours, sometime people are in a situation which may be unfamiliar or special in a way that it triggers their conscious effort to deal with it, or doing something different from they usually do, then the more *strategic behaviours* will take their roles.

Ten relational strategies have been proposed by Canary and Stafford (1994) i.e.: positivity, openness, assurances, social networking, sharing tasks, joint activities, cards/letters/calls, avoidance, antisocial, and humor. *Positivity* refers to behaviours such as acting cheerful, being courteous and polite in conversation, and avoiding criticism of the partner. *Openness* refers to direct discussions about the nature of the relationship and setting aside times for talks about the relationship. *Assurances* are related to expressions of love and affection. *Social networking* refers to support for spouse to have his or her own social network. *Sharing tasks* is the strategy which related to the way couples handle their routine tasks and chores in a relationship. *Joint activities* refer to time spent together in order to maintain relationship. *Cards/letters/calls* associated to multiple channels used in relationship. *Avoidance* refers to evasion of partner or issues. *Antisocial behaviours* are unfriendly behaviours toward partner. *Humor* is the last strategy which refers to jokes and sarcasm.

ICT Use in Personal Relationships

There is a useful and comprehensive definition of ICT taken from Wikipedia (2008),

"Information and communication technology or technologies (ICT) is an umbrella term that includes all technologies for the communication of information. It encompasses: any medium to record information (whether paper, pen, magnetic disk/ tape, optical disks - CD/DVD, flash memory etc. etc.); and also technology for broadcasting information - radio, television; any technology for communicating through voice and sound or images - microphone, camera, loudspeaker, telephone to cellular phones. At present, it is apparently culminating to information communication with the help of Personal Computers (PCs) networked through the Internet through information technology that can transfer information using satellite systems or intercontinental cables. Indeed, information technology (IT) has become a kind of a hub for communicating information, most often using computers."

Years of research have shown that ICT is helpful for building and maintaining relationships. It was close to a decade ago, scholars have found that technologies, such as telephone – which is comparatively the old one, or the newer and more sophisticated one – e-mail, are helpful in people's relationships (Wellman and Guila, 1999; Stafford, Kline, and Dimmick, 1999; as cited in Wei and Lo, 2006). Regarding phone call, Wei and Lo (2006) showed that 'affection' was the strongest predictor of how often their respondents made calls to families or relatives, and there are significant relationships between the number of cell phones a respondent owned, the length of time the respondent had owned a cell phone, total use per day, and the frequency of making family-oriented calls. Those who had more than one cell phone, used them longer, and used them more frequently every day, called their loved ones more often. Short Message Service (SMS) as one of the most popular and cheapest phone features has also been an object of study in this area. Leung (2007) in a study on motives in SMS mobile messaging found that among six factors generated from factorial analysis, 'affection' was the second factor which had second highest eigenvalue, but interestingly showed highest mean scores on its corresponding items.

Beside telephone (fixed and mobile), internet is also a very popular communication tool nowadays, which attracts people to relate through it. Some of its unique and appealing characteristics are: more secure, geographically distance-free, comparatively lower cost, and intimacy-provoking but equal in nature (Amichai-Hamburger and McKenna, 2006). Enormous development in computer technology has also made possible for people to perform real-time interactions through the Internet. 'Synchronous communication' allow people to send and receive message instantaneously as if they actually meet (Barnes, 2003). One of the most popular synchronous forms of communication is instant messaging where people can exchange mostly text input with their partners. This feature has been proven to be significant in promoting intimacy by the research of Hu, Wood, Smith, and Westbrook (2004).

E-mail is another facet of internet capabilities which is a powerful tool in internetmediated communication. Although it's considered to be asynchronous, many studies show that it remains widely-used in maintaining relationships. One of the recent studies of our particular interest was done by Johnson, Haigh, Becker, Craig, Wigley (2008) which illustrated that maintenance behaviours can occur over email across different types of relationship. Contents of those behaviours are of course different from the ones engaged in face-to-face communication, but they are still pretty similar in nature. Emails with family members were most likely to exhibit the maintenance behaviours of openness, social networks, and positivity, while romantic partners were most likely to report assurances, openness, and positivity. Both romantic partners and family members reported a higher proportion of assurances, which focus on communicating the importance of the relationship, than friends did. Friends might be utilizing email for more everyday talk through the use of more relaxed language, whereas romantic partners tend to communicate and reinforce the message of relational importance. One more attractive aspect of internet these days is its ability to communicate positivity in nice and cheerful expressions, such as e-mailed complementary messages, virtual flowers, or emoticons (Mantovani, 2001,

as cited in Ye, 2006). Those simple but expressive emoticons are believed to have the capacity to enhance desired relational characteristics (Riva, 2001, as cited in Ye, 2006).

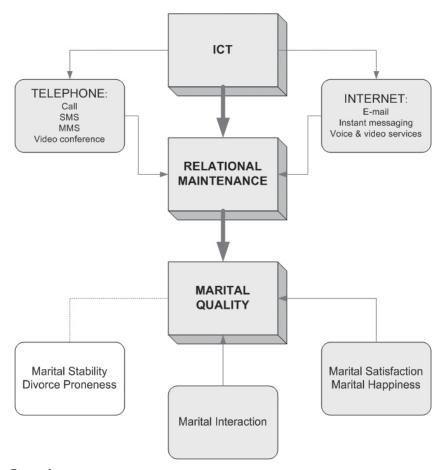
There are two pertinent issues in doing research on ICT use in relationship that is proximity and gender. Boneva, Kraut, and Frohlich (2001) found that those two factors are important and somehow inter-related in determining e-mail usage in personal relationships. They suggest that women are more likely than men to use e-mail to communicate with family and friends who are separated by distance and women are more interested in actively seeking communication by e-mail with someone far away. Women's socialized tendency to be connected and close in relationships seems to drive them to use e-mail as an economical way to connect with others far away. However, they stated further that men and women used e-mail similarly for those who live in the same local area, mainly for coordination of joint activities. Regarding gender differences, data revealed that women showed more positive attitudes toward using e-mail as a tool to connect with others as compared to men. Women found sending e-mail to family and friends was more useful and enjoyable than men did (Boneva, Kraut, and Frohlich, 2001).

The diagram below illustrates concepts which will be studied in this research i.e.: information and communication technologies, relational maintenance, and marital quality.



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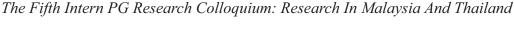
Research Questions

The research questions for this research are as follows:

- 1. Which ICT features that married individuals usually use to communicate with their spouses? How is their pattern of usage, in terms of frequency, duration, etc.?
- 2. How do they incorporate relational maintenance behaviours in their ICT-mediated communication? Which relational maintenance behaviours that they usually perform?
- 3. What are the relationships between ICT usage pattern, relational maintenance behaviours, and marital quality?
- 4. Is there any specific relationship between particular dimensions of ICT usage pattern, relational maintenance behaviours, and marital quality?
- 5. What are the contributions of demographic factors i.e.: age, sex, income, duration of marriage, etc. toward those patterns of relationship?

Proposed Methods of Study

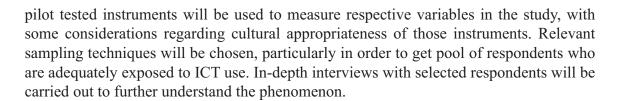
Given the scarcity and multi-directional suggestions from earlier findings pertaining to this area of study, the proposed research will adapt more exploratory perspective. No hypothesis testing will be conducted. Emphasis would be put on describing as many as possible relationships surrounding phenomenon being studied. Appropriate standardized,







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References

- 1. Adler-Baeder, F., Higginbotham, B., & Lamke, L. (2004). Putting empirical knowledge to work: Linking research and programming on marital quality. *Family Relations*, 53 (5), 537-546.
- 2. Amato, P. R., Johnson, D. R., Booth, A., & Rogers, S. J. (2003). Continuity and change in marital quality between 1980 and 2000. *Journal of Marriage and Family*, 65 (1), 1-22.
- 3. Amichai-Hamburger, Y. & McKenna, K. Y. A. (2006). The contact hypothesis reconsidered: Interacting via the internet. *Journal of Computer-Mediated Communication*, 11 (3), 825-843.
- 4. Barnes, S. B. (2003). *Computer-Mediated Communication: Human to Human Communication Across the Internet*. Boston: Allyn and Bacon, Inc.
- 5. Boase, J. & Wellman, B. (2006). Personal relationships: On and off the internet. In Vangelisti, A.L. & Perlman, D. (Eds.), *The Cambridge Handbook of Personal Relationships* (p. 709-723). New York: Cambridge University Press.
- 6. Boneva, B., Kraut, R., & Frohlich, D. (2001). Using e-mail for personal relationships: The difference gender makes. *American Behavioural Scientist*, *45* (3), 530-549.
- 7. Canary, D. J. & Stafford, L. (1994). Maintaining relationships through strategic and routine interaction. In Canary, D.J. & Stafford, L. (Eds.), *Communication and Relational Maintenance* (p. 3-22). California: Academic Press, Inc.
- 8. Canary, D. J., Stafford, L., & Semic, B. A. (2002). A panel study of the associations between maintenance strategies and relational characteristics. *Journal of Marriage and Family*, 64, 395-406.
- 9. Computer Industry Almanac Inc. (2006). *Europe #1 in Per Capita Cell Phone Usage*. Retrieved November 29th, 2007, from http://www.c-i-a.com/pr0206.htm
- 10. Fincham, F. D. & Linfield, K. J. (1997). A new look at marital quality: Can spouse feel negative and positive about their marriage? *Journal of Family Psychology, 11* (4), 489-502.
- 11. Gottman, J. M. & Notarius, C. I. (2002). Marital research in the 20th century and the research agenda for the 21st century. *Family Process*, 41 (2), 159-197.
- 12. Hassebrauck, M. & Aron, A. (2001). Prototype matching in close relationships. *Personality and Social Psychology Bulletin, 27,* 1111-1122.
- 13. Hassebrauck, M. & Fehr, B. (2002). Dimensions of relationship quality. *Personal Relationships*, *9* (3), 253-270.
- 14. Hu, Y., Wood, J. F., Smith, V., & Westbrook, N. (2004). Friendship through IM:





- Examining the relationship between instant messaging and intimacy. *Journal of Computer-Mediated Communication*, 10 (1), 00-00.
- 15. Internet World Stats (2008). *Internet Usage Statistics*. Retrieved March 14th, 2008, from http://www.internetworldstats.com/stats.htm
- 16. Johnson, A. J., Haigh, M. M., Becker, J. A. H., Craig, E. A., & Wigley, S. (2008). College students' use of relational management strategies in e-mail in long distance and geographically close relationships. *Journal of Computer-Mediated Communication*, 11 (2), 381-404.
- 17. Leung, L. (2007). Unwillingness-to-communicate and college students' motives in SMS mobile messaging. *Telematics and Informatics*, *24*, 115-129.
- 18. Lewis, R. A. & Spanier, G. B. (1979). Marital quality: A review of the seventies *Journal of Marriage and the Family, 42 (4),* 825-839.
- 19. Malaysian Communications and Multimedia Commission (2007). *Selected Facts and Figures*. Retrieved March 14th, 2008, from http://www.skmm.gov.my/facts_figures/stats/pdf/Quarter12007.pdf
- 20. Olson, D. H. & DeFrain, J. (2006). *Marriages and Families: Intimacy, Diversity, and Strengths*. New York: McGraw-Hill, Inc.
- 21. PEW Internet & American Life Project (2007). *A Typology of Information and Communication Technology Users*. Retrieved November 27th, 2007, from http://www.pewinternet.org/pdfs/PIP_ICT_Typology.pdf
- 22. Segrin, S. & Flora, J. (2005). *Family Communication*. New Jersey: Lawrence Erlbaum, Inc.
- 23. Spanier, G. B. (1979). The measuring of marital quality. *Journal of Sex and Marital Therapy*, *5* (30), 288-300.
- 24. Spanier, G. B. & Lewis, R. A. (1980). Marital quality: A review of the seventies. *Journal of Marriage and the Family*, *6*, 121-146.
- 25. Teske, J. A. (2002). Cyberpsychology, human relationships, and our virtual interiors. *Zygon, 37 (3),* 677-700.
- 26. Wei, R. & Lo, V. (2006). Staying connected while on the move: Cell phone use and social connectedness. *New Media and Society, 8 (1),* 53-72.
- 27. Weigel, D. J. & Ballard-Reisch, D. S. (1999). All marriages are not maintained equally: Marital type, marital quality, and the use of maintenance behaviours. *Personal Relationships*, 6 (3), 291-303.
- 28. Wikipedia (2008). *Information Communication Technology*. Retrieved June 3rd, 2008, from http://en.wikipedia.org/wiki/Information communication technology
- 29. Ye, J. (2006). Maintaining on-line friendship: Cross-cultural analyses of links among relational maintenance strategies, relational factor, and channel-related factors. *Dissertation*, Georgia State University.
- 30. Young, M. A. (2004). Healthy relationships: Where's the research? *The Family Journal: Counseling and Therapy for Couples and Families*, 12 (2), 159-162.

