LOVE AND FRIENDSHIP IN CYBERSPACE

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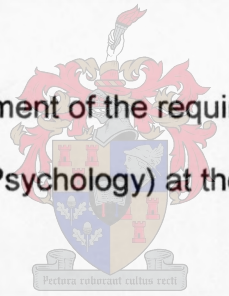

Thesis presented in partial fulfillment of the requirements for the degree of Masters of Arts (Counselling Psychology) at the University of Stellenbosch.

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DECLARATION OF AUTHENTICITY

I, the undersigned, hereby declare that the work contained in this thesis is my own original work, and that I have not previously in its entirety or in part submitted it at any university for a degree.

Signature Date

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ABSTRACT

Since its birth in the early 1960's the Internet has been growing exponentially in all areas and it is predicted that by the year 2002, 490 million people around the world will have Internet access. Similarly, a rapidly increasing number of people are finding themselves working and playing on the Internet, using computer mediated communication (CMC) to converse, exchange information, debate, court, and show compassion. As a result CMC has become a new way for people to find or meet each other via social Internet tools and form and develop personal relationships. Malcolm R. Parks (1997) compiled a theory of relational development, incorporating seven dimensions along which the nature of interaction changes as relationships develop or deteriorate: 1. Interdependence (influence on each other), 2. Breadth (variety of interaction), 3. Depth (intimacy of interaction), 4. Commitment (expectations that a relationship will continue), 5. Predictability and understanding (familiarity with each other), 6. Code change (creating own linguistic forms and culture) and 7. Network convergence (introducing each other to respective online contacts and social networks).

This study investigated the relational development reached in interpersonal relationships initiated and maintained online via social Internet tools. As mainly South Africans responded, results provide first time information about South African Web users' online relationships. Results show that the majority of online relationships reached above average levels of relational development as measured by elevated scores on most of the seven dimensions. The results also show significant differences between the levels of relational development reached in online friendships as opposed to online romantic attachments. The results are consistent with past research and could be used as a point of departure for further investigations into South African's Internet social practices and relational development in online settings.

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OPSOMMING

Die Internet het, sedert sy oorsprong in die vroeë 1960's, eksponensieël gegroei tot dié mate dat, teen die jaar 2002, 'n voorspelde 490 miljoen mense wêreldwyd Internet toegang sal hê. Daar is net so 'n dramatiese toename in die hoeveelheid mense wat die Internet begin gebruik ten einde te werk en te speel, deur CMC (computer mediated communication) te gebruik om te gesels, te debatteer, inligting uit te ruil, mekaar die hof te maak en ondersteuning te verleen. As gevolg hiervan is CMC 'n nuwe platform waar mense mekaar ontmoet deur sosiale Internet instrumente in te span en op hierdie wyse persoonlike verhoudings te begin. Malcolm R. Parks (1997) het 'n teorie van relasionele ontwikkeling saamgestel, waarvolgens hy die sewe dimensies wat verander soos verhoudings groei of disintegreer, inkorporeer. Die dimensies is: 1. Interafhanklikheid (invloed op mekaar), 2. Breedte (variasie van interaksie), 3. Diepte (intimiteit van interaksie), 4. Verbintenis (verwagting dat die verhouding sal hou), 5. Voorspelbaarheid en begrip (bekend wees met mekaar), 6. Kode verandering (nuwe taalvorme en idiome) en 7. Netwerk konversie (om mekaar bekend te stel aan elektroniese en ander kontakte).

Hierdie studie het die relasionele ontwikkeling ondersoek wat bereik is deur interpersoonlike verhoudinge wat deur middel van 'n sosiale Internet instrument geïnisieer en onderhou is. Hoofsaaklik Suid-Afrikaners het deelgeneem en vir die eerste keer is statistiek oor Suid-Afrikaanse Internet gebruikers se elektroniese vehoudings beskikbaar. Resultate toon dat die meerderheid van die verhoudings hoër as gemiddelde vlakke van relasionele ontwikkeling bereik het, soos gemeet deur die sewe dimensies. Die resultate wys ook dat daar 'n betekenisvolle verskil is tussen die relasionele ontwikkeling van elektroniese vriendskappe en romantiese verbintenisse. Die resultate stem ooreen met vorige studies en vorm 'n stewige grondslag vir verdere navorsing oor Suid-Afrikaners se sosiale Internet praktyke en verhoudings.

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DECLARATION FROM DEPARTMENT

This work is the result of a research project, which is of the same extent as that required for a master's thesis.

It is a rule of the Department of Psychology that the report of the research may take the form of an article, which is ready for publication in a scientific journal.

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Since its inception in the late 1960's, the Internet has grown from a mere link between a few American universities and defense laboratories, to a global network that, by the late 1990's, was connecting over 50 000 000 users worldwide. Since the early 1990's the Internet has been doubling in size every 12 to 15 months and currently the number of Internet users is estimated to double every 4 months (Parks & Floyd, 1996; Parks & Roberts, 1998). The *Computer Industry Almanac* predicted that by the year 2002 approximately 490 million people around the world will have Internet access (Cyberatlas, 2000).

As the Internet is growing exponentially in all areas, a rapidly increasing number of people are finding themselves working and playing on the Internet, using it to meet people via social Internet tools (for example e-mail, chat rooms, newsgroups, mailing lists, Internet relay chats, ICQ's, bullet board systems, interactive World Wide Websites and text-based virtual environments). Internet users utilise computer-mediated communication (CMC) to exchange information, debate, court, and show compassion (Chenault, 1997). According to Lingafelter (1995) people in virtual communities use the words they type on their screens to exchange pleasantries and argue, engage in intellectual discourse, conduct commerce, exchange knowledge, share emotional support, make plans, brainstorm, gossip, fight, fall in love, find friends and lose them, play games, flirt, create a little art and just talk. People bring their real-life problems and personalities with them to their virtual lives. Chenault therefore concludes that CMC has become a new way for people to find each other and a new way for personal relationships to take shape and develop.

In South Africa, a similar pattern is unfolding. In November 1998 Media Africa reported that there were 1 040 000 Internet users in South Africa (Cyberatlas, 2000). The Media Africa research (1998) further revealed that the typical South African Web user is male, approximately

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35 years old, urban, educated and accesses the Internet, on average, once a day. A calculated 35% of the 1 400 respondents of the 1998 Media Africa study fell in the age group 20-30 years, while 56% of respondents were married or living together, 6% were divorced and 35% were single. Although we have information on the number of South African Web users as well as their profile and online spending patterns and buying power, no research has been done on social Internet practices and possible resulting online relationships of South African Web users.

Because of the rapid growth and expansion of the Internet's social venues, research is required on the impact of novel opportunities and risks for the development of interpersonal relationships online. The growth of computer-mediated communication and the increase in interpersonal relationships in online settings, pose new challenges for our understanding of social relationships both in cyberspace and in general. These new types of relationships also present new challenges and opportunities for contemporary approaches to interpersonal communication and relationship development. Given the fact that existing psychosocial theories have mostly disregarded social settings that do not involve frequent face to face (FtF) interaction, research is needed to relate the central explanatory forces in theories of relational development (like managing uncertainty, forecasting rewards and costs, and obtaining rewards), to online settings (Parks & Floyd, 1996).

Cyberspace can no longer be seen as the technological fantasy that popular media portrays, and we can no longer afford to think of relationships formed or maintained online as somehow remote and exotic. The ultimate social impact of cyberspace will not flow from its fascinating capabilities, but rather from the fact that people are putting it to ordinary, even mundane, social use (Parks & Floyd, 1996). Popular and media attention have often fixated on the more manipulative and deceptive aspects of online relationships, as CMC provides opportunities for

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gender switching, self-misrepresentation, and identity manipulation (Lea & Spears, 1995). On the other hand, these same opportunities have the advantage of creating an "identity workshop" in which people learn and test social skills. For instance, their online identities allow them to overcome the shyness they feel in FtF interaction, or provide isolated, disabled or socially inept people with the opportunity to develop social relationships (Cooper & Sportolari, 1997).

What is needed to convey the true nature of online relationships, is systematic research to map the prevalence of personal relationships in online settings, the basic demographics of the relational respondents, the levels of relational development reached in online relationships, and their links to offline (FtF) settings (Parks & Floyd, 1996).

As a result of the above-mentioned shortcomings in existing social relational research, this study aimed to investigate the relational development reached in interpersonal relationships initiated and maintained on the Internet via social Internet tools. This study aimed to provide evidence in support of the hypothesis that online friendships and romantic attachments can reach intimate levels of relational development. Here two important concepts need to be defined, so as to confirm their exact meaning, as used in this study:

Interpersonal Relationships are characterised by two people that have mutual influence on each other, have frequent interaction that continues over a period of time, and include many different kinds of activities and events (for example, friends who discuss many different topics and share a wide range of activities or events) (Taylor, Peplau & Sears, 2000).

Relational Development refers to the changes that take place as a relationship develops or deteriorates. According to Parks and Floyd (1996) a personal relationship develops as "its

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respondents come to depend on each other more deeply and in more complex ways" (p.88). For the purpose of this study, relational development is conceptualised according to seven relationship dimensions: interdependence, breadth or variety of interaction, depth or intimacy of interaction, commitment, predictability and understanding, code change, coordination and online network convergence (Parks, 1997). In layman's terms then, relational development in this study refers to respondents' assessment of how intimate (close and personal) their online relationships have become, and how much they have come to disclose of themselves.

Several additional terms, commonly used in the electronic and computer industry, and relevant to this study, require clarification.

The **Internet** is a global network of networks: that is, an INTERnational NETwork (hence, the name INTERNET). All of the networks belonging to the Internet use the same protocol for communications, based on Transmission Control Protocol/Internet Protocol (TCP/IP) technology. In layman's terms, the Internet is a worldwide collection of computers that communicate with each other via phone lines, cables, optical fibers and satellites. It is a communications facility that allows users' computers to send e-mail messages to other users' computers anywhere in the world and to access information (text, pictures, sounds, etc.) stored on service computers, called servers, anywhere in the world (Internet Definition, 1999).

The **World Wide Web (WWW)** is the fastest growing segment of the Internet. It is a system designed to access documents online over the Internet. Like a spider's web, it links information together from around the world. A Web page is a document written with embedded codes to be read over the World Wide Web, and HTML (Hyper Text Markup Language) is the embedded coding Web pages use to tell a Web browser how to display a text file. Hypertext refers to

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embedded links, found in one document, that leads to another. Searching and surfing on the Internet involves starting with the known and traveling to the unknown by using, for example, search engines, Web browsing, e-mail and chat facilities (Love Online, 1999). The most used Internet facility is e-mail, which not only enables people to send and receive personal and business messages, but also to take part in electronic discussions using, for example, newsgroups and mailing lists (Internet Definition, 1999).

Cyberspace is quite dramatically defined by the Computing Science/Mathematics Faculty of the Simon Fraser University as "A new universe, a parallel universe created and sustained by the world's computers and communication lines. A world in which the global traffic of knowledge, secrets, measurements, indicators, entertainment, and alter-human agency takes on form" (Cyberspace: Definition a). Simplified: "Cyberspace is a non-physical space where people interact with one another and with other computer systems via networks" (Cyberspace: Definition b). Bruce Sterling (1999) defines Cyberspace as:

> "the 'place' where a telephone conversation appears to occur: not inside your actual phone, the plastic device on your desk, nor inside the other person's phone in some other city, but in '_the_place_between_ the phones', 'the indefinite place _out_there_, where two human beings actually meet and communicate" (p.3).

Being **online** refers to the operation of a functional unit and equipment that is connected to a system, which is in operation (Online, 1996 a). In computer terminology, online is the state or condition of a device or equipment that is under the direct control of another device that is functional and ready for service (Online, 1996 b).

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Social Internet tools like e-mail, ICQs, chat rooms, newsgroups, mailing lists, Internet relay chats, bullet board systems, interactive World Wide Websites and text-based virtual environments can be used for social purposes to amongst others, converse, send documents, search and browse (ICQ, 1999).

Computer-mediated communication (CMC) is defined by Harasim, Rosenbaum and Snyder (1991) as "any exchange of messages through electronic media involving the use of computers" (p.8). Computer-mediated communication is sometimes called computer-mediated conferencing because of the exchange of text-based communication between and among respondents who are separated in space and time, but who are otherwise related through the subject of the communication.

Having defined the key concepts, it is important to note that conflicting views on interpersonal relationships and computer-mediated communication exist in the relationship literature. There are those who view online relationships as shallow, impersonal and often hostile. Examples of theories supporting this point of view are the Social Presence Theory and the Social Context Cues Theory. Both require physical proximity as a prerequisite for a relationship, and both place a high premium on body language (Parks & Floyd, 1996). However, these claims have repeatedly been challenged by those who argue that CMC liberates interpersonal relations from the confines of physical locality, thereby creating opportunities for new personal relationships and communities. According to Walther (1992), people adapt their textual cues to meet their needs when faced with a medium that does not carry visual and aural cues. He argues that people who communicate need to and will find a way to manage their uncertainty and develop rapport. CMC allows them to do this, but requires more time than in conventional settings. Walther and Burgoon (1992) are of the opinion that the negative effects ascribed to the

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computer as medium for the development of relationships could in fact be attributed to the time restrictions imposed on online interaction in early laboratory and field studies. Thus they conclude that CMC is not unable to convey relational and personal information, but takes longer to do so.

The first empirical evidence of the use of CMC for social and relational purposes came from e-mail studies conducted in the workplace. These studies consistently showed the interpersonal nature of CMC: e-mail was used for socialising, maintaining relationships, playing games and exchanging emotional support. More and more personal accounts of online experiences are making it clear that, in the eyes of respondents, these online relationships are perceived to be genuine and personal (Finholt & Sproull, 1990).

In further research, Walther (1996) argues that under certain circumstances, online respondents became **more** intimate than their FtF counterparts. He believes this is a result of the sender, receiver and feedback characteristics of CMC, which combine to create heightened positive impressions. In online settings CMC message senders are not bound by cues others infer from their physical appearance or vocal attributes and as a result senders are better able to plan self-presentations, to accentuate certain and conceal other matters and have increased opportunity to self-censor. Therefore a more favourable self-presentation is possible online. Similarly receivers of online communication are likely to inflate or over-interpret the limited information they receive, and as a result reach more positive conclusions than their FtF counterparts. Combined, the interactive feedback between senders and receivers online leads to a process known as behavioural confirmation, where the sender and receiver has a reciprocal influence on each other through positive feedback. This is also the case in FtF settings, but behavioural confirmation is intensified in the minimal-cue interaction that takes place online. In summary then, Walther

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contends that online relational partners have more control over the interaction and more opportunities to reflect on and plan self-representations than their FtF counterparts. Furthermore, the initial anonymity and lack of commitment to continue the online interaction may stimulate higher levels of disclosure in the same way Thibault and Kelley (cited in Parks & Roberts, 1998) observed strangers meeting on trains, and not expecting to see each other again, disclose personal information to each other in the course of their journey.

To summarise: in the past, information about physical appearance, non-verbal information, paralinguistic behaviour, as well as gaze and postural movement, were thought to be prerequisites of, and vehicles for, expressing intimacy. It is now believed that the significance attributed to these factors simply reflects the fact that most theories of relationship development **predate** the popularisation of CMC (Lea & Spears, 1995; Parks & Floyd cited in Parks & Roberts, 1998).

The focus now moves to the existing theories that explain the initiation and maintenance of interpersonal relationships. To conceptualise and understand the nature of interpersonal relationships on- and offline, we need to consider theories of interpersonal communication and relationship development. Firstly, theories pertaining to the forming or initiating of a friendship or romantic attachment will be investigated.

Taylor et al. (2000) offer explanations of why we are attracted to some people, who then become our friends or lovers, while not to others. He refers to learning and interdependence theories (particularly Social Exchange Theory) for this purpose. Learning theories are based on the assumption that a person's behaviour is determined by prior experience, and in the social application of learning theory, association and reinforcement are two of the mechanisms by which

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learning occurs. The Association Principle of Learning Theory contends that we come to like people whom we associate with good experiences, while we dislike those associated with bad ones. The Reinforcement Principle on the other hand contends that we like people who reward us in one way or another, especially when the reward is social approval and when people evaluate us positively. Interdependence theories, however, focus on people's interaction with each other and the resulting influence they have over each other. According to Social Exchange Theory - a prominent example of an interdependence theory - we like people when we perceive our interactions with them as profitable, i.e. when the rewards we get from the relationship outweigh the costs. Another interdependence theory that offers an explanation for people's gravitation towards each other is Uncertainty Reduction Theory. According to Berger and Calabrese (1975) increasing predictability of your relational partner's responses, providing explanations for one's own behaviour and understanding one's partner's behaviour, as well as gaining information about one's partner and providing information about oneself, will result in greater self-disclosure and higher levels of intimacy. Taylor et al. (2000) also suggest that familiarity should be included amongst the variables that influence interpersonal attraction. This suggestion is based on Zajonc's (cited in Taylor et al.) demonstration that mere frequent exposure to a person can increase one's liking of that person.

Next we investigate the theoretical perspectives pertaining to the development of relationships in terms of self-disclosure and intimacy. Conversation is an essential aspect of human interaction, and self-disclosure is a special type of conversation in which we share intimate information and feelings with another person. We disclose information to another person for many reasons, including: expressing feelings and ideas, for self-clarification (as talking helps us understand ourselves and our problems), for social validation of our views and reactions, for gaining social control by revealing or concealing information, and for relationship development,

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where we share personal information and confidences as a way of initiating a relationship and moving toward increasing levels of intimacy (Taylor et al., 2000).

According to Altman and Taylor (1973) and Taylor (1968) the process of forming an intimate relationship involves a process of penetrating beyond the surface of another person in order to gain ever increasing knowledge about that person's inner self. Taylor (1968) called this process 'social penetration', and found that, as relationships develop from superficial to intimate, social penetration increases on at least two dimensions:

- breadth (discussing a wider range of topics and sharing more and diverse activities) and
- depth (progressively disclosing more personal information).

Although the process of really getting to know another person is more complex than this, it is clear that the development of intimacy results from the history of cumulative self-disclosure in relationships (Taylor et al., 2000).

It was noted previously that traditional theories of relational development assumed both physical proximity and frequent interaction between prospective partners or friends, and underscored the importance of physical appearance and physical attraction, especially in the development of romantic relationships. However, if we re-examine the assumptions made about online communication at the hand of these theories, it seems that these conditions are no longer prerequisites for the development of personal relationships. As Parks and Floyd (1996) have suggested, the emphasis placed on these factors, illustrate the fact that most theories of relational development predate the current explosion in computer-mediated communication technology. However, in the case of interdependence theories such as the Social Exchange Theory, the driving force behind relational development is the forecast of a positive reward: cost ratio. In the Uncertainty Reduction Theory, the driving force is the progressive reduction of

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uncertainty about the partner and the relationship (Taylor et al., 2000). These theories do not require physical proximity or frequent interaction, thus suggesting that these factors do not necessarily predict:

- how rewarding future interactions might be,
- how one might feel about another person,
- how one might be treated by that person, or
- how personal one's relationship with that person will become (Parks, 1997; Parks & Floyd, 1996; Parks & Roberts, 1998).

Thus interdependence theories are applicable for and help explain relational development online.

This research study is based on the theory of online relational development proposed by Malcolm Parks. It incorporates both the Social Exchange Theory and the Uncertainty Reduction Theory (both interdependence theories) discussed earlier, and includes additional perspectives on communication networks (Parks, 1997). Internationally Parks is considered to be the pioneer of online relationship studies. He has published numerous articles and chapters on CMC and relational development in this field (Parks, 1995; Parks, 1997; Parks & Adelman, 1983; Parks & Barnes, 1988; Parks & Eggert, 1991; Parks & Floyd, 1996; Parks & Riveland, 1987; Parks & Roberts, 1998; Parks, Stan, & Eggert, 1983). According to Parks (1997), relationships live in the communication between the respondents. The interaction between two people not only stimulates changes in cognition and affect, but is also the medium through which those changes become real for the self and others. Parks and Floyd explain that a personal relationship develops as "its respondents come to depend on each other more deeply and in more complex ways" (p.88) and that, as relationships develop, breadth and depth of interaction increase, including variety of discussion topics, activities and communication channels.

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Therefore, Parks (1997) believes that the first objective of a theory of relational development that would also be applicable in online settings, is to **identify the dimensions along which interaction changes as relationships develop or deteriorate**. Conceptualizing the relational development in terms of single indicators such as attraction, closeness or satisfaction, proves to be one dimentional and simplistic. Thus interpersonal relationships of all types are conceptualised as developing from the impersonal to the personal along a series of dimensions. According to Parks, a working definition of relational development includes the following seven dimensions: 1) Interdependence, 2) Breadth (variety of interaction), 3) Depth (intimacy of interaction), 4) Commitment, 5) Predictability and understanding, 6) Code change and 7) Online network convergence. These dimensions compile Parks' Theory of Relational Development, and are used as the theoretical basis for the present study:

1) **Interdependence:** Interdependence theories state that when people interact, they influence each other. In other words, when two people have mutual influence on each other's thoughts, feelings or behaviours, they are interdependent (Taylor et al., 2000). This suggests that the outcomes one person receives depend, at least partially, on the behaviour of the other. According to Parks and Floyd's (1996) interpretation, a relationship develops as the degree of mutual influence, as represented by interdependence, increases. This is because respondents come to depend on each other more deeply, and in more complex ways. Likewise, the relationship deteriorates as the mutual influence on each other decreases.

2) **Breadth:** As relationships develop, the breadth or richness of interaction increases (Altman & Taylor, 1973). At the broadest level breadth refers to the variety of behaviours, resources, topics and activities, as well as the variety of communication channels utilised to maintain or

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develop the relationship (Parks & Floyd, 1996). In Hays' study (cited in Parks & Roberts, 1998) on same-sex friendships, friends who displayed a greater variety of behaviours across a greater range of categories (i.e. task sharing, assistance, expressing emotion, mutual disclosure) grew closer over a three-month period than friends whose relationships stagnated or terminated. Breadth may also be conceptualized in terms of the variety of conversational topics. Taylor (cited in Parks & Roberts, 1998) for example, tracked the number of different topics new college roommates discussed during their first three months and found an increase in both non-intimate and intimate topics. If breadth could alternatively be conceptualized in terms of the variety of communication channels or contexts used, one could investigate whether personal relationships that started in computer-mediated channels such as the Internet, frequently broadened or expanded over time to incorporate other channels like FtF contact.

3) **Depth:** The depth dimension of relational development has most often been associated with self-disclosure and intimacy. Intimacy is defined as a "process in which one person expresses important self-relevant feelings and information to another and, as a result of the other's response, comes to feel known, validated and cared for" (Clark & Reis, 1988). Depth, in terms of this study, is conceptualized as the subjective importance respondents attribute to the topics they discuss and the behaviours they exchange. The more important, risky or personal the information revealed, the greater the depth of the relationship (Parks & Floyd, 1996).

4) **Commitment:** Commitment is the expectation that a relationship will continue into the future. This expectation may be based either on the feeling that one wants the relationship to continue (personal commitment), that it ought to continue (moral commitment), or that it

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has to continue (structural commitment) (Johnson, 1991). Despite the variety of definitions of commitment, they mostly share the view that commitment is a psychological state rooted in private value judgements (Parks, 1997).

5) **Predictability and understanding:** Respondents in a relationship must have some understanding and agreement about what behaviours are desirable and acceptable, what response each is likely to have, and how each person's actions fits into larger relational sequences. In other words, each must become an expert on the other (Planalp & Garvin-Doxas, cited in Parks, 1997). This illustrates that the requirements for coordinated interaction will always impose the need to manage uncertainty and create understanding. The management of uncertainty, therefore, figures prominently in nearly every major theoretical perspective on relational development. It plays the title role in the Uncertainty Reduction Theory and plays a less explicit, but no less important role in social exchange models such as the Social Penetration Theory and Interdependence Theories (Altman & Taylor, 1973). Social Exchange Theory, a example of an interdependence theory, states that we like people when we perceive our interactions with them to be profitable, i.e. when the rewards we get from the relationship outweigh the costs). Thus we are most attracted to those who we expect to provide the highest ratio of rewards to costs during social interactions and our social interactions are regulated by our desire to derive maximum pleasure and minimum pain from others (Taylor et al., 2000). It is also important to consider the role gender differences, gender roles and patterns of gender socialization play in relational partners' understanding of each other and the evolving relationship (Winstead, Derlega & Rose, 1997).

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6) **Code change:** Parks (1997) stipulates that, when in developing relationships, individuals create their own linguistic forms and cultural codes. Three particular changes occur in communication codes as a relationship develops. The first of which is code specialization. Specialized language in the form of personal idioms, for example, both affirms the relational bond between people and increases the efficiency of their communication. Personal idioms are those words, phrases and gestures that have unique meanings within a specific relationship. Research on personal idioms has consistently shown their use and variety to be related to perceptions of satisfaction and closeness in relationships (Bell, Buerkel-Rothfuss, & Gore, 1987). Less research has been conducted on the second type of communication code change, namely code abbreviation. As a relationship develops, the respondents may no longer need to elaborate as much (Bernstein, cited in Parks, 1997) and their conversation is typically marked by rapid topic shifts, incomplete expressions, and frequent gaps in content (Hornstein, cited in Parks, 1997). The third change is called code substitution. Parks explain that, with code substitution, interaction that once required considerable verbal coordination can now often be managed with nonverbal communication and assumptions made by relational partners.

7) **Online network convergence:** As everyday relationships develop, people introduce their partners to each other's friends and family and develop a common social circle. One way to determine who is part of someone's network, is to ask them which people are psychologically significant to them and whom they feel close to. Another option is to ask people to list their confidants, sources of personal favours, or others who provide a specific service to them. In online relationships, the seventh dimension of relational development, network convergence, would refer to how relational partners introduce each other not only to their respective online contacts, but also to other people in their real life social networks

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(Parks & Eggert, 1991). The level of network convergence can be influenced by the following factors:

- network proximity (the distance between unacquainted persons in partners' networks),
- network overlap (between partners' networks),
- cross-network contact,
- cross-network density (contact between members of partners' separate networks),
- attraction to the partner's network, and
- support from each other's networks (Parks, 1997).

Only two studies researching relational development using these seven dimensions preceded the present study, which leaves this study with very little research to compare its findings with. The two studies mentioned both explored the phenomenon of online relationships, who had them and what level of relational development was reached in these online relationships. The first study was conducted by Parks and Floyd (1996) and aimed to examine the relational world being created through Internet discussion groups called Newsgroups. The second study was conducted by Parks and Roberts (1998) and aimed to examine the prevalence, type and development of personal relationships in real-time text-based virtual environments called MOOs (Multi-User Dimensions, Object Oriented).

The most important finding of Parks and Floyd's (1996) study was that 60.7% of their respondents had formed personal relationships online and more than half of these relationships registered above the midpoint of the relational development scale, indicating higher than average levels of relational development. Furthermore, opposite sex relationships were more common than same-sex relationships; the duration of relationships ranged from less than a month to six years; women were significantly more likely than men to have formed a

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relationship; and relationships that started online migrated to other settings, particularly telephone calls, letters and meetings.

In Parks and Roberts' (1998) study, similar results were documented. An impressive 93% of respondents reported having at least one ongoing online relationship, spending on average 7.27 hours a week in communication with their relational partner. These reported online relationships also showed average to high levels of relational development. The respondents in Parks and Roberts' study were primarily American citizens (78%), and significantly more women (72.2% of female respondents) reported having online relationships, in comparison with men (54.5% of male respondents had online relationships). The majority (66.9%) of the respondents classified their online relationships as friendships, while 26.3% reported having romantic relationships online and the majority (83.6%) of relationships studied were with opposite-sex relational partners. Parks and Roberts further found that most respondents were single (only 29% of respondents were married or cohabiting). The average duration of the online relationships studied by Parks and Roberts was 13.31 months (SD=9.03). Parks and Roberts reported that the relationships they studied which was formed via MOOs, reached higher levels of total relational development when compared to Parks and Floyd' study of relationships formed via newsgroups.

This research study repeats the studies of Parks and Floyd (1996) and Parks and Roberts (1998) in an effort to confirm their research results. The present study also expands on the work of Parks and Floyd and Parks and Roberts by determining and comparing the relational development reached for different subgroups. Subgroup divisions are based on nationality, gender, relationship type, gender of relational partner and relationship status. As was the case with the previous studies, the present study is an exploratory study, which explores uncharted

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territory in relational psychology. This study takes on a further challenge: to be the first of its kind conducted locally, as no research has been done on South Africans' online friendships and relationships thus far.

Research Questions

The main research question deduced from this literature overview and discussion of the theoretical framework, was: **What is the level of relational development of interpersonal relationships initiated and maintained online?**

In support of this research question, several secondary research questions followed:

- What is the prevalence of online friendships and relationships if respondents' nationality, gender, relationship type, gender of relational partner and relationship status is compared?
- Does the level of relational development of South Africans' online relationships differ from other world citizens?
- Does the level of relational development reached by women in their online relationships differ from that of men?
- Does the level of relational development differ between online friendships and online romantic attachments?
- Does the level of relational development of same-sex relationships differ from that of opposite-sex relationships?
- Does the level of relational development of single (divorced, single or widowed) respondents differ from that of attached (relationally involved or married) respondents?
- Is there a correlation between the duration of online relationships and the level of relational development reported?
- Do interpersonal relationships conducted by using one Internet social tool as opposed to another, have a higher possibility of reaching greater levels of relational development?

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METHOD

Research Design

This was a quantitative, exploratory Internet survey research study. Internet survey research was chosen because it is the media through which online relationships are conducted and because it made real-time data collection possible, without the constraint of the researcher having to be geographically proximate to the respondents.

Respondents

All Internet users worldwide who have initiated an online relationship that is primarily maintained online, qualified to take part in this research study, regardless of gender, relationship status (single, divorced, widowed, involved or married), sexual preference, duration of relationship or social Internet tool used. Part of the unique aim of this study was to concentrate on the prevalence of online relationships amongst South African Web users and on the levels of relational development reached by South Africans in these online relationships. Thus the marketing of this study primarily focused on recruiting South African respondents. Network convergence (discussed earlier) and direct online advertising were used to recruit respondents. Network convergence involved forwarding a request to participate in this study to online contacts of the research team, asking them to forward this request to their online contacts. Online marketing involved advertising in South African online newspapers and chat rooms.

In total, the Website had 264 hits and 179 respondents completed the online questionnaire over a period of five months. However, the following exclusionary criteria had to be incorporated so as not to contaminate and complicate interpretation of results:

- Respondents who met their relational partner in person were excluded from the analysis (see Appendix A - question 7);

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- Respondents under the age of 18 were excluded from the analysis, as developmental phase influences the nature of interpersonal relationships (see Appendix A - question 2);
- Respondents not involved in either friendships or romantic attachments online, but in work or family relationships were excluded from the analysis (see Appendix A - question 5);

After adherence to the exclusionary criteria discussed earlier, 78 responses had to be excluded, while 102 respondents' responses were incorporated and analysed. Exclusions were due to respondents: having met each other in person (58 respondents); being too young (5 respondents); communicating with work contacts or family (6 respondents); and due to incomplete questionnaires. The demographics of these respondents, as described by nationality, gender and age are as follows:

Table 1

Frequency Table of Demographic Information about Respondents in this Research (N=102).

Constructs	n	Percentage
Nationality		
South African	92	90.2
Other World Citizen	10	9.8
Gender		
Male	61	59.8
Female	41	40.2
Age		
18-24	39	38.2
25-29	34	33.3
30-34	15	14.7
35-39	4	3.9
40-44	5	4.9
45-49	4	3.9
50>	1	1.1

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Questionnaire

An electronic questionnaire was used to ask respondents about their most significant online relationships (see Appendix A). The questionnaire was designed as a Website containing the actual questions and information about the present research study and was used to gather both demographic information from the respondents and measure the level of relational development reached in their most significant online relationship. The questions measuring relational development were based on the original questionnaire compiled by Parks and Floyd (1996), which in turn was based on Parks' extensive research (Parks, 1995; Parks & Adelman, 1983; Parks & Barnes, 1988; Parks & Eggert, 1991; Parks & Riveland, 1987; Parks, et. al., 1983). Specifically, the questions from a shortened version of this questionnaire, as used by Parks and Roberts (1998), were used. Demographic questions were informed by the aim of this study and the exclusionary criteria discussed earlier. The questions pertaining to the demographics of the respondents accounted for 9 of the total 33 items. However, the primary focus of this questionnaire was to measure the seven dimensions of relational development, as identified and researched by Parks (1997). The questions measuring these seven dimensions accounted for 24 of the total 33 items, giving three to five items per dimension. These were:

1) Interdependence (questions 10, 24 and 29),
2) Breadth (questions 14, 32 and 33),
3) Depth (questions 12, 20 and 23),
4) Commitment (questions 11, 13, 16, 19 and 21),
5) Predictability and understanding (questions 15, 22, 26 and 31),
6) Code change (questions 17, 18 and 25), and
7) Online network convergence (questions 27, 28 and 30).

Although total scores on each dimension are indicative of relational development, an overall relational development score, reflecting the level of total relational development of respondents'

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online relationships, was also calculated. The reliability of this questionnaire to measure relational development was determined and expressed by a Kuder-Richardson Reliability Coefficient of 0.693.

The questionnaire consisted of three sections:

Section 1: Respondent's demographic details (e.g. nationality, age, relationship status);

Section 2: Descriptive details of the respondent's most significant interpersonal online relationship (e.g. What kind of a relationship is it? With the same or opposite sex? How long ago did you start this relationship?); and

Section 3: Ratings of the current level of relational development of the respondent's most significant online relationship. Responses to the items were designed to measure each of the 7 dimensions discussed earlier.

Sections 1 and 2 contained choices via radio buttons or dropdown boxes. Section 3 contained statements about respondents' most significant interpersonal online relationships, rated on a 7-point Likert Scale that ranged from 1 (strongly disagree) to 7 (strongly agree). A high score on any or all of these dimensions suggested that significant relational development had taken place within the relevant online settings.

Procedure

Scoreline Technologies, a South African based Internet Company that delivers real-time sports commentary and live scoreboards through the Internet, hosted a Website that contained and administered the Online Relationship Questionnaire (see Appendix A). The Director of New Business Development at the time, managed this project, while the Web developer designed the online questionnaire and Website. The Website address was: http://www.orq.org.za/. It was an interactive Website that stored responses in the appropriate format for statistical analysis. It included an introductory page stating the objective of the study, the requirements for completing

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the questionnaire and an assurance that results would be confidential and would only be used for academic purposes. The participants had to read and agree to two conditions before access to the questionnaire was granted: 1). to be honest and truthful and 2). to complete all 33 questions. An option for acquiring more information about the research study was available. On the additional information page more background information of the study was provided, including the research questions being investigated. The third Web page contained the actual questionnaire, consisting of 33 questions and taking approximately eight minutes to complete.

Respondents answered the questionnaire in their own time, as the invitation to participate in this research study was sent either as a personal e-mail to be accessed at their convenience, or they responded to this invitation posted in an online newspaper or in a chatroom. The respondents knew that all results were confidential, and would only be used for research purposes. Of the 179 respondents, 115 asked to receive feedback about the research results, and provided their e-mail addresses for this purpose. This greatly improved our confidence in the importance of this research. The research team also received various e-mails of respondents wanting to share more about their experiences with their online relationships, as they found the questionnaire to be too restrictive. It was revealed that at least three respondents married their online relationship partners.

Statistical Analysis

Descriptive statistics were used to analyse and interpret research results, as it is best suited to survey research. Inferential statistics were used to report the overall level of relational development of respondents' online relationships, in answer to the primary research question. Further inferential statistics were used to compare subgroups formed on the basis of nationality, gender, relationship type, gender of relational partner and relationship status. In addressing the

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supporting research questions these subgroups were compared in terms of frequency and level of relational development. A frequency analysis, performed by means of the statistical programme SPSS (George & Mallery, 1999) was utilised for this purpose. An ANOVA design was used to do variance analysis and a t-test was done to determine whether the difference between groups was significant. A parametric correlation study (Pearson Correlation Coefficient) was done to determine the correlation between duration of relationship and the level of total relational development. In conclusion, the reliability of this instrument (the Online Relationship Questionnaire) to measure relational development was determined and expressed by calculating the Kuder-Richardson Reliability Coefficient.

RESULTS

The results supporting the primary research question will be reported first. Following this, the results of the secondary research questions will be reported.

A frequency analysis investigated the level of relational development reached by the 102 respondents. The results are reported in Table 2.

Table 2

Frequency Table of the Total Relational Development Scores of Respondents' Online Relationships (N=102).

Scores	Total Score	Mean Scale Point	Median	Mode	SD
Total Relational Development	96.16	4.01	97.5	102	15.59

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The overall level of relational development was determined by calculating a total relational development score for the seven dimensions. From Table 2 it is clear that the total relational development of respondents as described by the mean of the total group is 96.2 (23 items, scaled from 1-7, yielding a scale range of 23 to 161), which translates into a scale point of 4,01. This indicates higher than average levels of relational development, as 3.5 is the theoretical midpoint of the scale. Figure 1 depicts a graphic representation of the distribution of the total relational development scores.

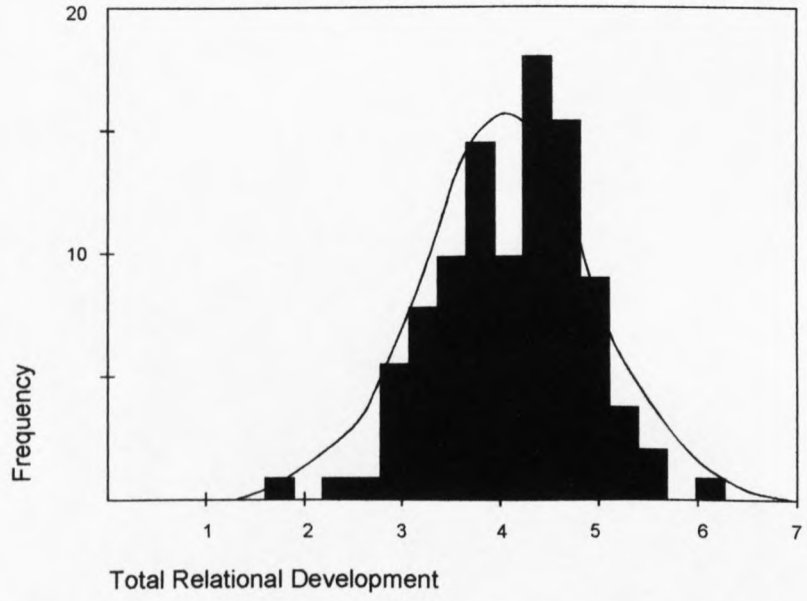

Figure 1. Graphic representation of the distribution of the total relational development scores

The distribution of the total relational development scores showed in Figure 1 approximates a normal distribution and a normal curve was drawn for ease of comparison.

To illuminate the total relational development scores further, separate scores of relational development reached by respondents on each of the seven dimensions are reported in Table 3. The findings of Parks and Roberts (1998) were included here to facilitate comparison between the two studies.

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Table 3

Frequency Table of the Results of Each Dimension's Mean Scale Point of Relational Development Compared to a Previous Study.

Dimension	Parks & Roberts (1998) Mean Scale Point	Present Study Mean Scale Point	SD
1. Interdependence	4.46	3.79	0.95
2. Breadth	5.76	4.72	0.73
3. Depth	5.71	4.32	1.13
4. Commitment	4.26	4.25	1.03
5. Predictability and Understanding	5.21	3.84	0.67
6. Code Change	5.49	3.63	1.09
7. Network Convergence	4.11	3.40	0.97

Table 3 contains the descriptive statistics indicating the average scale point on each of the seven dimensions and shows that the results of this study was fairly similar, although slightly lower than that of Parks and Roberts (1998). The dimensions of Breadth and Depth have reached the highest levels of relational development in both studies.

Upon further statistical analysis, respondents' nationality, gender, relationship type, gender of relational partner and relationship status were investigated in terms of the prevalence of (who were more likely to engage in) online relationships. The frequencies of the online relationships reported in this study are depicted in Table 4.

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Table 4

Respondents' Nationality, Gender, Relationship Type, Gender of Relational Partner and Relationship Status (N=102).

Variables	n	%
Nationality		
South African	92	90.2%
Other world citizen	10	9.8%
Gender		
Male	61	59.8%
Female	41	40.2%
Relationship Type		
Friendship	61	59.8%
Romantic attachment	41	40.2%
Gender of Relational Partner		
With same sex	20	19.6%
With opposite sex	82	80.4%
Relationship Status		
Involved	82	80.4%
Single	20	19.6%

In reference to Table 4, it is clear that the majority (90.2%), but not all respondents to this study were South African. This study also revealed that more men than women (59.8 % men vs. 40.2% women) were involved in online relationships, and opposite-sex relationships were more common than same-sex relationships (80.4% vs. 19.6%). In addition, the majority of relationships were classified as close friendships (59.8%) as opposed to romantic attachments (40.2%). It was also revealed that mostly involved respondents, rather than single respondents, conducted online relationships (80.4% vs. 19.6%). In the last instance the present study found that a clear majority of the online relationships reported were conducted by involved or married respondents.

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During further analysis, t-tests were conducted to determine whether there were significant differences between the level of relational development reached between the various subgroups of the present study. These results are documented in Table 5.

Table 5

Independent t-Test Results of Total Relational Development Scores and Respondents' Nationality, Gender, Relationship Type, Gender of Relational Partner and Relationship Status (N=102).

Variables	Mean	SD	t
Nationality			
South African	96.45	15.99	
Other world citizen	93.5	11.59	0.566
Gender			
Male	93.85	15.63	
Female	99.59	15.07	-1.842
Relationship Type			
Friendship	91.72	15.85	
Romantic attachment	102.76	12.73	-3.721**
Gender of Relational Partner			
With same sex	96.95	14.38	
With opposite sex	95.96	15.95	0.253
Relationship Status			
Involved	95.67	15.52	
Single	98.15	16.11	-0.636

** = $p<0,01$

The t-test results depicted in Table 5, show that there was not a significant difference between the level of relational development reached by South Africans in their online relationships, compared to that of other world citizens. Differences between men and women, same and opposite-sex romantic attachments, and involved versus single respondents were also found not to be significant in terms of the level of relational development reached. A significant

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difference was found however between the total relational development scores of online friendships and that of online romantic attachments ($t(100)=-3.721$, $p= 0.000$).

The correlation between the duration of online relationships and the level of relational development reached, were calculated. The results of the Pearson Correlation Coefficient are depicted in Table 6.

Table 6

Results of Pearson Correlation Coefficient between Duration of Relationship and Total Relational Development Scores (N=102).

	Duration of Relationship	Total Relational Development
Duration of Relationship	1.00	0.008
Total Relational Development	0.008	1.00

As shown in Table 6, the correlation between the duration of online relationships and the level of total relational development proved not to be significant.

A further investigation was conducted to determine how specific Internet social tools used to conduct the online relationship differed with regards to the level of relational development reached. The results of the frequency analysis of the total relational development reached through each Internet social tool are depicted in Table 7.

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Table 7

Frequency Table of the Mean Scale Point of the Total Relational Development Reached through Various Internet Social Tools (N=102).

Internet Social Tools	n	Mean Scale Point	Total Mean Score	SD
E-mail	52	3.93	94.33	16.57
Chat rooms	10	4.18	100.4	20.3
ICQ	12	4.14	99.42	11.84
Internet Relay Chat (IRC)	23	4.02	96.48	13.52

As so few respondents were using mailing lists, World Wide Websites and other Internet tools, these tools were excluded, while e-mail, chat rooms, ICQ and IRC were included for the one way ANOVA analysis. The results of the one way ANOVA analysis comparing the total relational development of the various Internet social tool subgroups are depicted in Table 8.

Table 8

Results of One Way Analysis of Variance between Total Relational Development Scores and Internet Social Tool Subgroups (N=97).

	df	Sum of Squares	Mean Square	F	p
Between Groups	3	483.67	161.22	0.644	0.588
Within Groups	93	23 268.5	250.2		
Total		23 752.17			

It follows from Table 8 that there was not a significant difference in the level of relational development reached due to the specific Internet social tool used.

As an add-on to the present study, the total relational development scores reached by those respondents (N=58) who did not meet online, and therefore was not included in the statistical

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analysis of this study, but still conducted and developed meaningful relationships online, was calculated. These results are depicted in Table 9.

Table 9

Frequency Table of the Total Relational Development Score of Respondents with Online Relationships but Who did not Meet Online (N=58).

Scores	Mean Scale Point	Median	Mode	SD
Total Relational Development	3.94	4	3.96	0.56

Table 9 indicates that the total relational development score of respondents who did not meet online, is expressed as a scale point of 3.94, which is slightly lower than the 4.01 (see Table 2) of respondents who met online.

DISCUSSION

The purpose of this study was to investigate the level of relational development reached in interpersonal relationships initiated and maintained online via social Internet tools. In accordance with the studies by Parks and Floyd (1996) and Parks and Roberts (1998), the present study concludes that the average total relational development score (4.01) reached by respondents in their most significant online relationships, exceeds the theoretical midpoint of the scale (3.5). This means that online relationships reported in this study also reached higher than average levels of relational development. As discussed, relational development refers to the changes that take place as a relationship develops or deteriorates and is conceptualised according to seven relationship dimensions: interdependence, breadth or variety of interaction, depth or intimacy of

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interaction, commitment, predictability and understanding, code change and online network convergence (Parks, 1997).

The seven dimensions making up Parks' (1997) Theory of Relational Development explains the high levels of relational development to some extent. Parks contended that a relationship is dependant on the communication between the relational partners, and that the processes of self-disclosure and sharing that takes place in online interaction, are responsible for the high levels of intimacy reached. The role of self-disclosure and intimacy in relational development is the cornerstone of his theory. Taylor et al. (2000) went further to describe self-disclosure as sharing intimate information, confidences and feelings in conversations, which in turn enhances relationship development, increases what we share of ourselves, and leads to higher levels of intimacy. As online partners are exclusively reliant on textual cues, self-disclosure and sharing dominates online relating and thus strongly impacts on relational development online. Robson and Robson (1998) confirmed that self-disclosure leads to intimacy, because as one person releases increasingly personal information, the other reciprocates with equally increased levels of intimate communication, thus expanding the relationship and enhancing intimacy. Taylor et al. (2000) summarised these explanations of what happens as relationships develop, by saying that the development of intimacy in relationships results from the cumulative history of self-disclosure between the two relational partners, which is what happened between the relational partners who participated in this study.

As reported, the present study further found, as did the study of Parks and Roberts (1998), that the Breadth and Depth dimensions had the highest relational development scores and was the best indicators of relational development online (see Table 3). This can be explained by the increasing social penetration between respondents whose self-disclosure became increasingly

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personal and intimate, and whose influence on each other increased. According to Altman and Taylor (1973) and Taylor (1968), forming an intimate relationship involves a process of penetrating beyond the surface of another person in order to gain ever increasing knowledge about that person's inner self. This process is called social penetration. Taylor (1968) found that, as relationships develop from superficial to intimate, social penetration increases on at least two dimensions: depth (progressively disclosing more personal information), and breadth (discussing a wider range of topics and sharing more and diverse activities). The process of social penetration, the high relational development scores respondents reached on the breadth and depth dimensions, and the cumulative effects of the processes of self-disclosure and intimacy, explains the higher than average levels of relational development reached by participating relational partners.

However, this does not fully explain why social penetration, self-disclosure and intimacy **online** reach high levels of relational development. What happens in CMC that is different from face to face (FtF) interactions? Walther (1992) reports several instances where CMC has surpassed the level of affection and emotion of parallel FtF interaction. He calls this 'hyperpersonal communication', i.e. CMC that is socially more desirable than we experience in parallel FtF interaction. According to Walther, the prerequisites for these instances are influenced by the sender, receiver and feedback characteristics of CMC. The following characteristics of CMC combine to create heightened positive impressions: the opportunity for favourable self-presentation, self-censoring of responses, over-reliance on and interpretation of text cues, and more time to sort through and respond to multiple goals in others' messages, thereby triggering positive future feedback loops and stimulating self-disclosure. It is therefore concluded that the hyperpersonal qualities of CMC strongly influenced the high level of relational development reached by the online relationships studied here.

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The first supporting research question this study aimed to answer was: What is the prevalence of online friendships and relationships if respondents' nationality, gender, relationship type, gender of relational partner and relationship status is compared? To start with respondents' nationality: it was reported that this was a predominantly South African study (92%), while Parks and Roberts' (1998) study was predominantly American. In both cases the majority, but not all respondents were from the country where the research team resides, thus both studies attracted mostly local respondents. If gender is considered, it is apparent that more male (59.8%) than female respondents in the present study reported having online relationships. This is consistent with the general profile of South African Web users as compiled by Media Africa (1998), which reports that the majority of South African Web users are male. These findings are in contrast however, with that of Parks and Roberts (1998) who found that more women reported having online relationships. One possible explanation for this discrepancy could be gender inequality in terms of Internet access in South Africa. In other words, it is possible that more South African men than women have Internet access either at work or elsewhere, as a result of gender inequality in social and work spheres, and the resulting immobility of many South African women. Further research is required to explore the profile of the South African Web user and access to online facilities. It is interesting to mention that, similar to Media Africa's reported profile of South African Web users, the respondents to this study were young: 86.2% of this study's respondents were under 35 and the majority were between 20 and 30 years of age.

This study found that more online friendships (59.8%) than romantic attachments (40.2%) were reported. Similarly, the majority of respondents in the Parks and Roberts study (1998) also classified their online relationships as friendships. Although online friendships are found to be more common than romantic attachments, the level of relational development should be taken into consideration before deductions can be made. As was the case with Parks and Roberts' study, the vast majority (80.4%) of online relationships (of which most were friendships) reported

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in this study were with opposite-sex relational partners. This is an interesting finding given the fact that opposite-sex friendships are less common than same-sex friendships in offline (FtF) settings (Winstead, Derlega & Rose, 1997). Although further research is required to explain this phenomenon, Cooper and Sportolari (1997) provided one possible explanation. They argued that the distance people perceive to be between them in online settings, creates a feeling of anonymity, and makes them feel safer to reveal more as they don't experience the same restrictions as they do in FtF interactions. As a result, it is easier to form close relationships online. Furthermore they explain that in online communications, initial impressions are based on how people describe, express and present themselves. Thus self-presentation is much more under one's control and the socialised roles and restrictions based on gender roles don't have such a strong hold on relational partners. One can mould one's self-presentation the way one wants it to be. As a result, it is easier to relate to opposite-sex partners, as one is free from restrictive, socialised gender roles.

As opposed to Parks and Roberts (1998) who found that most respondents were single, the vast majority of online relationships reported in this study, were conducted by involved partners, i.e. partners who were either married or involved in romantic relationships. This could partly be ascribed to the discrepancy in definitions used: Parks and Roberts classified all unmarried respondents (excluding those who were cohabiting) as single, while this study excluded respondents who are involved in romantic relationships from the single category. These results propose another interesting question however: If we take into consideration that a fair amount of relationships are of a romantic nature, and that the majority of respondents are either married or involved, does that imply that some of these relationships reflect the social phenomenon of Internet infidelity? And if so, how many? Shaw (1997) defines Internet infidelity as:

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> "taking sexual energy of any sort (thoughts, feelings or behaviours) outside of a committed relationship in such a way that it damages the relationship and then pretending that this drain of energy will affect neither the partner nor the relationship, as long as it remains undiscovered" (p.29).

Shaw further contends that Internet infidelity reflects a decision not to personally relate to one's partner, but to another, which robs the relationship of integrity and intimacy. Further research about Internet infidelity might shed some light on this interesting question and on Internet infidelity as a whole.

The second supporting research question was: Does the level of relational development of South Africans' online relationships differ from other world citizens? No significant difference was found between the levels of relational development reached by South Africans, compared to other world citizens. A very small percentage of this study's respondents were from other countries however, and it is not possible to base assumptions on this finding. Further research focusing on national, rather than international sample groups, will be required to truly compare South Africans to other world citizens.

The next research question this study attempted to answer was: Does the level of relational development reached by women in their online relationships differ from that of men? This study found no significant difference in the relational development reached in the online relationships conducted by men compared to women. Thus we can conclude that gender does not influence the level of relational development reached online. Again Cooper and Sportolari's (1997) arguments that self-presentation online frees relational partners from their restrictive, socialised gender roles, could partly explain why gender does not matter in online relating.

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This study next investigated the difference in total relational development reached between online friendships and online romantic attachments. This study found that there was a significant difference between the total relational development scores in online friendships and online romantic attachments (t=-3.721, p= 0.000). Relationships described as romantic attachments reached considerably higher levels of relational development. The main reason for this seems to be the fact that the depth and breadth of self-disclosure and thus intimacy are higher in romantic attachments than in friendships. Parks and Roberts (1998) also contend that in comparison with friends, romantic partners spent significantly more time together online. As time spent online with one's partner was not measured in this study, one can only hypothesize about its correlation with the higher levels of total relational development reached by romantic partners.

In their research about interdependence and relational partner's responsiveness to each other's needs, Clark and Reis (1988) also provided a possible (and coincidental) explanation for the higher levels of relational development in romantic relationships. Their research showed that the most valued benefits of friendships are the provision of a confidant, support, and status. The fulfillment of these needs leads to satisfaction in friendships. On the other hand, romantic partners expect something different in order to be satisfied: they expect information (self-disclosure) and love. In Clark and Reis' study the exchange of these particular and more symbolic rewards tended to lead to the deepening of intimacy in relationships. As discussed, Parks (1997) contended that self-disclosure and intimacy are the most important contributors to relational development in online relationships in the absence of physical and vocal cues. If self-disclosure and intimacy are more valued and more intense in romantic attachments as Clark and Reis suggests, that would explain why romantic attachments have even higher levels of relational development in this study than friendships.

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Another research question investigated was: Does the level of relational development of same-sex relationships differ from that of opposite-sex relationships? There was not a significant difference between the level of relational development same-sex partners reached and that of opposite-sex partners. Thus, in this study, the gender of one's relational partner was not a significant predictor of relational development.

Next the difference between the level of relational development of single (divorced, single or widowed) respondents versus involved (involved or married) respondents were investigated. Results showed that again there was not a significant difference between single and involved respondents, which means that respondents' involvement or non-involvement in a significant offline relationship does not influence how close and personal their online relationships become. The question could be asked whether that means that respondents see their online relationships as separate from the real life ones, and whether that sparks more questions about Internet infidelity. Further research is required to shed more light on this.

The next research question was: Is there a correlation between the duration of online relationships and the level of relational development reported? This study found that the average duration of the online relationships reported here was 12.8 months and that there was no correlation between the duration of the online relationship and the level of total relational development reached. Similar to our findings Parks and Roberts (1998) also found that the duration of a relationship had no significant impact on the development of that relationship. The amount of time spent with one's online relational partner per week did, however, have a significant influence on the development of the relationships reported in Parks and Roberts' study. It should be noted that not determining how much time relational partners spend together,

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is a shortcoming of this study, as Parks and Roberts found that time spent with one's partner proved to be a significant factor in the development of online relationships.

The last research question was: Do interpersonal relationships conducted by using one Internet social tool as opposed to another, have a higher possibility of reaching greater levels of relational development? The results (see Table 7 and 8) indicated that the social Internet tool used to develop the online relationship does not significantly impact on the level of total relational development reached. This must mean that the Internet medium and the individual's utilisation of that medium and not the specific software, hardware or social tool, determined the nature and depth of the interaction as reported by respondents to this study. It is not possible to compare the present study with that of Parks and Floyd (1996) or Parks and Roberts (1998) in terms of the social Internet tool used. They focused their research on relational development reached through specific online tools, namely Newsgroups and MOOs respectively, while respondents to the present study utilised a variety of social Internet tools.

To expand on this study the total relational development scores reached by those respondents who did not meet online, but still conducted online relationships, were also calculated. The scale point of the 58 respondents who were not incorporated in this study was 3.94, which, compared to the 4.01 scale point of the 102 respondents included in this study, is slightly lower. This could possibly be a result of the fact that heightened positive impressions that occur in online relating does not play such a strong role when the limited opportunity for self-presentation and physical and vocal cues already influenced the offline interaction. Interestingly both Parks and Floyd (1996) and Parks and Roberts (1998) found that relationships that start online tend to migrate to other settings, including telephone calls, letters and FtF meetings. Further research is indicated in order to determine why relational partners who meet elsewhere turn to social Internet tools to

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develop their relationships, and why their levels of relational development are similar, but slightly lower than that of relational partners who met online. Similarly it would be interesting to research why and when online relationships migrate to offline settings. A shortcoming of this study is the fact that it was not possible to track these online relationships to see where they migrate to from the Internet, how long they last, and what levels of total relational development is reached in the end. Longitudinal research would be very valuable to shed more light on the evolution of these reported online relationships. Several other related future research topics have been suggested through the course of this discussion. They include: investigating the gender differences in South African Internet users' online behaviours and ways of relating online; investigating the phenomenon of Internet infidelity and its relevance to online relationships; and investigating the quantity and quality of the time relational partners spend with each other online.

This study succeeded in its overall goal, namely to duplicate the valuable and pioneering work of Malcolm R. Parks in the field of online relationships. In line with previous studies, the online relationships studied here reached higher than average levels of total relational development. Again our findings challenge traditional relationship theories that require physical proximity, and offer support for Walther's (1992) theory that computer-mediated communication (CMC) has hyperpersonal possibilities, which means that CMC can match and surpass the level of intimacy reached in parallel FtF interactions. Further research into the prevalence and nature of CMC and resulting online relationships will prove valuable to Social Psychology's understanding of novel and unconventional ways of relating to others in the new millennium.

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APPENDIX A

ONLINE RELATIONSHIP QUESTIONNAIRE

INTRODUCTORY WEB PAGE:

An Internet Relationship Study:

This is an Internet Relationship study about Relational Development in Online Relationships.

It is a research study for a Masters Thesis in Counselling Psychology.

AN ABOUT WEB PAGE:

What is this research study about?

The growth of computer-mediated communication poses challenges for our understanding of interpersonal relationships. As part of a Psychology programme, Erma van Rensburg, a post-graduate Psychology student at the University of Stellenbosch, is studying the development of interpersonal relationships that are initiated and maintained online. This study is based on previous research conducted by Parks and Floyd (1996) and Parks and Roberts (1998).

The Purpose of this study is to investigate the level of relational development (closeness or intimacy and self-disclosure) of interpersonal relationships that are initiated and maintained online. If successful, this study will prove that online friendships and romantic attachments can reach intimate levels of relational development. Based on the purpose, the aim would be to answer the following research questions:

- What is the level of relational development of interpersonal relationships initiated and maintained online?
- What is the prevalence of online friendships and relationships if respondents' nationality, gender, relationship type, gender of relational partner and relationship status is compared?

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- Does the level of relational development of South Africans' online relationships differ from other world citizens?
- Does the level of relational development reached by women in their online relationships differ from that of men?
- Does the level of relational development differ between online friendships and online romantic attachments?
- Does the level of relational development of same-sex relationships differ from that of opposite-sex relationships?
- Does the level of relational development of single (divorced, single or widowed) respondents differ from that of attached (relationally involved or married) respondents?
- Is there a correlation between the duration of online relationships and the level of relational development reported?

Do interpersonal relationships conducted by using one Internet social tool as opposed to another, have a higher possibility of reaching greater levels of relational development?

If you have any further questions or queries, contact erma@org.org.za

QUESTIONNAIRE WEB PAGE:

Tell us about yourself:

Nr.	Question	Possible answers
1.	Nationality:	South African Other
2.	Age:	1=under 18 2=18-24 3=25-29 4=30-34 5=35-39 6=40-44 7=45-49 8=50-54

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		9=55-59 i=60+
3.	Gender:	1=male 2=female
4.	Relationship/Marital Status:	1=involved 2=married 3=single 4=divorced 5=widowed

Now ... think of your most significant online relationship:		
5.	Would you describe it as a:	1=friendship 2=romantic attachment 3=work contact 4=family relation 5=other: specify ……..
6.	Is it with someone of the same or opposite sex?	1=same sex 2=opposite sex
7.	How did you meet each other?	1=in person? 2=through an internet tool?

More about your most significant online relationship:		
8.	How long have you had this on-line relationship?	# . . . . . months
9.	What Internet social tool do you use most to contact your partner?	1=e-mail 2=chat room 3=newsgroup 4=mailing list 5=icq? 6=internet relay chat (IRC) 7=bullet board system

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		8=world wide web site 9=text-based virtual environments (e.g. moo or mud) 10=other? specify ……

Rate your most significant online relationship:								
Nr.	**Question**	**Strongly Agree**						**Strongly Disagree**
10.	The two of us depend on each other	1	2	3	4	5	6	7
11.	I would make a great effort to maintain my relationship with this person	1	2	3	4	5	6	7
12.	I would never tell this person anything intimate about myself	1	2	3	4	5	6	7
13.	This relationship is a very big part of who I am	1	2	3	4	5	6	7
14.	Our communication ranges over a wide range of topics	1	2	3	4	5	6	7
15.	I am very committed to maintaining this relationship	1	2	3	4	5	6	7
16.	We have developed the ability to "read between the lines" of each other's messages to figure out what is really on each other's mind	1	2	3	4	5	6	7
17.	The two of us use private signals to communicate in ways outsiders would not understand	1	2	3	4	5	6	7
18.	This relationship is not very important to me	1	2	3	4	5	6	7
19.	I can accurately predict how this person will respond to me in most situations	1	2	3	4	5	6	7
20.	I usually tell this person exactly how I feel	1	2	3	4	5	6	7
21.	I do not expect this relationship to last very long	1	2	3	4	5	6	7
22.	I am very uncertain about what this person is really like	1	2	3	4	5	6	7
23.	I feel I could confide in this person about almost anything	1	2	3	4	5	6	7
24.	We often influence each other 's feelings toward the issues we're dealing	1	2	3	4	5	6	7

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	with							
25.	I can get an idea across with a much shorter message than I would have to use with most people	1	2	3	4	5	6	7
26.	I can accurately predict what this person's attitudes are	1	2	3	4	5	6	7
27.	This person and I do not know any of the same people	1	2	3	4	5	6	7
28.	We have introduced each other (online or face to face) to our work associates	1	2	3	4	5	6	7
29.	The two of us have little influence on each other's thoughts	1	2	3	4	5	6	7
30.	We contact a lot of the same people on the Internet	1	2	3	4	5	6	7
31.	I do not know this person very well	1	2	3	4	5	6	7
32.	Our communication is limited to just a few specific topics.	1	2	3	4	5	6	7
33.	Once we get started, we move easily from one topic to another	1	2	3	4	5	6	7