Social context and communication channels choice among adolescents

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ABSTRACT

As online communication is more and more integrated in everyday life to support and maintain existing social ties, this study examined the factors associated with preference of face to face, phone or online conversations. A contextual framework that emphasizes the role of relationship origin, relationship intensity and content of communication on communication channel choice among adolescents was empirically tested. Based on a nationwide survey in Israel, it was found that communication content, relationship origin and place of residence affect the preference of face to face and online communication. Phone communication appears to be a more non specific channel to conduct personal and non personal conversations and relationship origin did not affect its use. These findings suggest that relationship origin is important, and face to face communication is preferred for ties that were initiated face to face and online communication for ties that were initiated online. For this sample of regular population, there is no indication that online communication tends to be personal or hyper personal. The use of all the communication channels is preferred to the maintenance of existing ties and is less used for the creation of new ties.

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1. Introduction

This study set out to investigate differences in adolescents' choices of communication channels. Studies indicate that the most frequent use of the Internet is for communication purposes and that computer-mediated communication (CMC) facilitates not only the formation of new social relationships but mainly the maintenance of existing social ties (Bryant, Sanders-Jackson, & Smalwood, 2006; Gross, Juvonen, & Gable, 2002; Haythornthwaite, 2002; Mesch & Talmud, 2006; Parks & Floyd, 1996).

Expansion in Internet use for communication purposes provides many young individuals the opportunity to choose various channels of communication to sustain their existing relationships and to create new social ties through face-to-face meetings, phone calls and online communication (Baym, Zhang, & Lin, 2004; Bryant et al., 2006; Gross et al., 2002; Valkenburg & Peter, 2007b).

However, in the last decade many studies have centered on the role of CMC in relationship formation with strangers (Sproull & Kiesler, 1986; Bargh & McKenna, 2004; Walther, 1996). This interest was reasonable as CMC challenged existing theories of media choice and relationship formation among strangers. The main effort was directed at understanding the effects of using a lean medium of communication, the determinants of impression formation online, the development of online relational intimacy, and the conditions under which personal and even hyperpersonal communication online was possible (Hian, Chuan, Trevor, & Detenber, 2004; Sproull & Kiesler, 1986; Tanis & Postmes, 2003; Tanis & Postmes, 2005; Tidwell & Walther, 2002).

But since online communication is primarily used to maintain existing ties, it is important to understand the determinants of media choice in a multi-channel communication environment. Here we focused on adolescence because during this period social relationships outside the family expand and their quality has been linked to various behavioral outcomes (Giordano, 2003). Social interaction with peers provides a forum for learning and refining socio-emotional skills needed for enduring relationships. Through interactions with peers, adolescents learn how to cooperate, to take different perspectives, and to satisfy growing needs for intimacy (Crosnoe, 2000; Rubin, Bukowski, & Parker, 1998). Furthermore, adolescents have incorporated online communication in their everyday life. They spend more time online than do adults, and they more often use online communication technologies than adults (Lenhart, Madden, & Hitlin, 2005). Despite youth extensive use of online, phone and face to face communication, there is little knowledge of the social factors that affect adolescents' choice of communication channels. The current study sets out to investigate the factors related to adolescents' choice of a specific communication channel to conduct their social interaction with friends who were met in face-to-face and online settings. It relies on a contextual communication framework of channel choice that emphasizes the role of location, relationship origin, and communication content and relationship intensity.

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2. Literature review

The use of the Internet for socializing is of particular interest for adolescents. Adolescence is a stage characterized by critical developmental changes in the social and physical realm. As children enter their teenage years they interact less frequently with their parents, and peer relationships take on greater importance. Peers act as emotional confidants, providing each other with advice and guidance, serving also as models of behavior and attitudes (Giordano, 2003). Still, parents continue to influence their children's attitudes and behaviors in important ways (Collins & Russell, 1991). But while in childhood parents were the main source of social relationships, in adolescence they are only one circle and peers represent an important component (Giordano, 2003).

Furthermore, adolescents are a segment of the population who are early adopters of information and communication technologies (ICTs), and are actively involved in adopting the Internet (Lenhart et al., 2005). Studies show that adolescents use information and communication technologies mainly for social purposes (Bryant et al., 2006; Gross et al., 2002; Lenhart, Rainie, & Lewis, 2001; Mesch & Talmud, 2006). Through ICTs adolescents communicate after school hours, exchange gossip and information about homework, meet new friends and provide and receive social support (Gross et al., 2002).

While online communication has become integrated in the social world of many adolescents, few studies have used large and representative samples of the youth population to examine systematic differences in the choice of communication channels (see Bryant et al., 2006, and Lenhart et al., 2005 for exceptions).

Early studies on CMC have assumed that this channel is less suited for personal and intimate communication than phone and face-to-face communication. The emphasis on limitations of mediated communication was based on Media Richness Theory (Daft, 1986), which postulated that characteristics of communication channels differ in terms of their ability to carry a message. In the hierarchy of communication channels proposed by Daft (1986), computer-mediated communication (CMC) is considered a lean medium as compared with face-to-face or telephone communication because it lacks instant feedback, the capacity to transmit multiple cues, and personalization (Sproull & Kiesler, 1991).

Later perspectives continued to recognize the limitations of CMC for effective communication, but argued that certain characteristics of the communicators and the communication channel can be instrumental in overcoming them. Bargh and McKenna (2004), for example, argued that a central feature of CMC, namely anonymity, can paradoxically be conducive to more intimate exchanges. According to these authors, intimate relationships require self-disclosure, which increases the experience of intimacy in online interactions. The relative anonymity granted by some forms of CMC greatly reduces the risks associated with such disclosures, in particular regarding intimate aspects of the self, because one can share inner beliefs and emotional reactions with less fear of disapproval and sanction (Bargh & McKenna, 2004).

In his hyper-personal model of CMC, Walther (1996) proposed that online social ties can be "impersonal", "personal", or "hyper-personal". The model emphasizes the importance of relationship duration: the idea is that establishing an intimate social relationship is a time consuming process, and beyond a critical point of communicative duration individuals are able to overcome the CMC limitations through the use of known symbols, shared impression management devices, and the development of a common language (Lea & Spears, 1995; Pfeil & Zaphiris, 2007).

We lack studies that have empirically compared factors associated with the choice of communication channels. The central argument of this paper is that choice of channel of communication depends on contextual characteristics of the existing relationship between communicators. The central variables explaining channel communication choice in interpersonal communication are location, relationship origin, and communication content and relationship intensity. In the next section I provide the rationale for the conceptual framework.

3. Location

Communication is an integral part of social relationships and takes place in a social context that includes geographic location, origin and intensity of the relation, and the information that is being communicated (Sproull & Kiesler, 1986; Walther, 1996). Geographic location provides the opportunities for and constraints on channel choice. When individuals are in proximity they participate in joint activities and are physically exposed to each other. Feld (1981) uses the concept of foci of activity, defining it as "social, psychological, legal, or physical objects around which joint activities are organized". Foci can be formal (school) or informal (regular hangouts), large (neighborhood) or small (household), and these foci of activity systematically constrain choices of friends, particularly among adolescents. From this perspective, foci of activity place individuals in proximity. For example, they provide opportunities for frequent meetings, which make for individuals revealing themselves to each other and choosing their friends from the set of people who are available through these foci.

Among adolescents, proximity is important for friendship formation as it establishes the boundaries within which they choose friends. Because of age limitations in access to driving license and often unreliable public transportation, location constrains more children and youth contacts than other age groups. A major location for meeting and making friends is school: there adolescents spend a large part of their waking hours. Yet other settings might be important as well. Adolescents spend their free time in neighborhood hang-outs that they frequent after school. These may be shopping malls, video arcades, and movie theaters, usually located in the neighborhood or nearby, where groups of adolescents get to know others who might live in the same neighborhood or locality but do not attend the same school (Cotterell, 1996). While geographical proximity or access is a necessary condition for face-to-face communication, it does not restrict the ability to use other channels of communication. In other words, physical proximity is a necessary condition for face-to-face communication, but phone and electronic communication can occur across all distances.

Furthermore, face-to-face communication is easier and cheaper with individuals living nearby (in the same neighborhood and city), but its cost rises with physical distance (Hampton & Wellman, 2001). By contrast, the cost of online contact does not vary with distance; not only is the financial cost reduced, but specific forms of CMC such as email provide temporal freedom as they do not require the simultaneous co-presence of the contacts to take place. Following this argument,

H1. Youth residing in the same location will prefer to communicate face to face, and individuals residing in distant localities will prefer to communicate by phone and online.

4. Relationship origin

The origin of the relationship is an important factor to consider. Recent studies have shown diversification in the sources of friendship formation among adolescents. Teens make new friends in the neighborhood and at school, but also online; sometimes the latter friendship moves to face-to-face meetings (Gross et al., 2002;

Mesch & Talmud, 2006; Wolak, Mitchell, & Finkelhor, 2003). Forming online relationships might be one of the most appealing aspects of Internet use among young people, given that forming social relationships is a developmental imperative of adolescence. Recent studies on adolescents' social relationships have started to differentiate relationships created offline from those created online (Bryant et al., 2006; Chan & Cheng, 2004; Mesch & Talmud, 2006). Studies on youth found significant differences between relationships that were formed through computer-mediated communication and the ones that were formed in face to face settings. Online relationships are characterized by less depth and intimacy (Chan & Cheng, 2004). They tend to be based around narrower topics of conversation and fewer activities than relationships whose origin is offline. Tie strength is weaker in online than offline relationships (Mesch & Talmud, 2006). Furthermore, relationships created online are likely to be maintained through online communication (Mesch & Talmud, 2006). Apparently, there is little overlap between offline and online friendships, and adolescents are very likely to create two different sets of social networks, one online and one offline, with not much overlap between them (Bryant et al., 2006). These studies are relevant to this one as they imply that some of the hypothesized antecedents of channel choice (relational strength and communication content) differ according to relationship origin and might translate into differential channel choice. As online ties are weak, namely based on narrow topics of conversations and few shared activities, they will probably be conducted over the phone and online rather than face to face. On the other hand it seems reasonable that relationships created offline will be maintained mostly face to face, as they are usually more holistic and closer (Mesch & Talmud, 2006). Thus we expect

H2. Social ties created online are more likely to be conducted online and over the phone that social ties that were created face to face.

5. Relationship duration

Social ties differ in terms of the intensity of the relationship. Friendship, for example, is distinct from other types of social relationships because contact with friends is more intense. Intensity is usually a feature that describes the history of the relationship and refers to its duration (Campbell & Lee, 1992). A central characteristic of social relationships is the development of a history of shared experiences that define a feeling of belonging and shared identity. In addition, the development of central characteristics of friendship such as trust and reciprocity are at least partially temporal processes. Trust develops through a process of mutual disclosure of personal information, and this requires time. Some social ties created online tend to migrate to other channels of communication such as the phone and face-to-face meetings. The more time individuals are acquainted the more likely are they to transfer their mediated communication to the phone and face-to-face meetings (Mesch & Levanon, 2003; Parks & Floyd, 1996). Thus, this study expected

H3. The longer the relationship, the more likely adolescents are to communicate using richer channels (face-to-face and the phone) and the less likely to communicate using leaner channels (online communication).

6. Perceived closeness to contact

The literature on personal relations has long been concerned with the quality of the ties that bind individuals. One way to measure this quality is by the strength of these ties (Marsden & Campbell, 1984). A tie's strength is usually assessed by a combination of factors, such as perceived closeness, intimacy and trust. Weaker ties are evinced in more casual relationships and in sparser exchanges; they typify relationships of those who enjoy fewer kinds of support. Strong ties exist in relationships on a high level of intimacy, involving more self-disclosure, shared activities, emotional as well as instrumental exchanges, and long-term interaction (Marsden & Campbell, 1984).

From this literature it follows that any social relationship is characterized by differing levels of perceived closeness, intimacy, and frequency of communication. The use of communication channels depends on the kind of social interaction of the communicators. The strength of the tie determines the ways, means, and expressions of communicators, and the motivation, needs and desires for communication (Haythornthwaite, 2002). In support of this argument, a study of youth found that online communication partners were perceived as less psychologically close than their face-to-face or phone communication partners (Boneva, Quinn, Kraut, Kiesler, & Shkolvski, 2006). Another study that investigated the association of online communication and closeness to friends, found that most of the respondents found online communication less effective than online communication in disclosing intimate information (Valkenburg & Peter, 2007b). This result might reflect the nature of youth online communication as they often talk to classmates that happen to be available online but are not necessarily close friends (Cummings, Lee, & Kraut, 2006).

Following this reasoning, in this study it was expected that

H4. The stronger the tie, the more likely it is that face-to-face and phone communication will be used.

7. Communication content

Online friendship formation has challenged existing models of communication. The 'Reduced Social Context Cues model" (Sproull & Kiesler, 1986) argues that CMC is a medium of communication inferior to face-to-face because it reduces features normally present in the latter. That communication is often textual, and does not provide non-verbal emotional clues or personal information about communication partners. The absence of these features has mainly negative effects, and CMC is more appropriate for routine and purely cognitive tasks (such as exchanging information and task-related issues) whereas face-to-face and phone communication are more appropriate for tasks that require more social and emotional content to be exchanged in messages (Sproull & Kiesler, 1986).

Others have argued that some qualities of CMC are conducive to greater intimacy, closeness, and strong ties. McKenna, Green, and Gleason (2002) assert that the relative anonymity of Internet interactions increases the likelihood of disclosure of personal information, and one can share one's inner beliefs and emotional reactions with much less fear of disapproval and sanction. On the Internet people often engage in greater self-disclosure with strangers because a stranger does not have access to a person's social circle so the dyadic boundary cannot be violated.

In the same vein, the hyperpersonal approach to CMC (Walther, 1996) investigated the conditions needed for online contacts to share personal and hyperpersonal information. The hyperpersonal model describes four factors – senders, receivers, the channel and the feedback – that interact with the technological features of online communication and that are associated with the high levels of intimacy often observed in online communication. According to the model, anonymity facilitates the management of impressions through self-selective presentation that highlights positive personal characteristics. Online communication allows senders great-

er control and time to craft the messages. In addition, online communicators engage in idealized attributions of their online partners. Finally, absence of a receiver's idealized perception of the sender may cause a sender to behave in a way that is consistent with this idealized view. This perspective indicates that in time communicators may overcome the lack of cues, creating shared and common symbols of emotions that facilitate disclosure and intimacy. Most studies testing conceptual frameworks of online communication were conducted among strangers, so we lack knowledge on communication channel use when CMC is used among acquaintances to sustain their social relationships. A number of studies found that adolescents perceive online communication as less suited for the disclosure of intimate information than face to face and phone conversations (Boneva et al., 2006; Subrahmanyam & Greenfield, 2008; Valkenburg & Peter, 2007b). Adolescents are likely to conduct online conversations while at the same time pursuing other activities, thus multitasking may be a specific explanation of youth use of face to face and phone for intimate conversations.

Thus, given the theoretical discrepancy between the perspectives, the research question is:

RQ. What communication channels are preferred for personal and for non personal communication?

8. Use of communication technologies among adolescents in Israel

In Israel, Internet use is rapidly expanding. In 1998 only 11% of Israeli households reported having access to the Internet; the figure had risen to 30% by 2002 and to 70% in 2005. As elsewhere, in Israel there is a digital divide. Internet use proved higher among males than females, and socioeconomic differences are reflected in Internet use. Most Internet users reported earning an average or above-average income, and being of Western origin (CBS, 2002).

Adolescents' use of the Internet has expanded even faster. While in 2001 only 35% of the adolescent population had access to the Internet, 65% had access by 2004. As to purpose, the overwhelming majority of adolescent Internet users reported that it was mainly for social purposes. Almost 74% of these respondents said that they liked to meet new people through the net (Mesch & Talmud, 2007).

In Israel, adolescents represent a significant proportion of Internet users, and in this sense they call for special attention. Furthermore, most current research focuses on English-speaking countries.

The use of information and communication technologies (ICTs) has grown very rapidly but displays a digital divide in their access and use by nationality. Data for families with adolescent children show that 86% of Jewish and 62% of Arab households report computer ownership at home. The percentage of households with adolescents reporting an Internet connection is 72% for the Jewish population but only 45% for Israeli Arabs. As for cell phones, 89% of Jewish households report owning cell phones as against 61% of the Israeli Arab population (Mesch & Talmud, 2006; CBS, 2007).

9. Methods

9.1. Survey method

Data were collected by means of a national survey of the adolescent population of the State of Israel between June and October 2004. The sampling procedure began with a random sample of 60 localities with a population of 2000 or more. Then, according to the size of the adolescent population in each settlement, neighborhoods were selected randomly. The number of neighborhoods in each settlement was determined by the juvenile population size (13–18 years old) in the locality. At least one neighborhood was randomly selected in settlements with a low proportion of adolescents, and more than one in the larger urban areas. In each neighborhood 15 households were randomly selected. The selected neighborhoods represented all geographic areas of Israel, and also different sizes of settlements, from big cities to small towns and villages. The survey included items on social and demographic characteristics of the youth, socio-demographic characteristics of their friends, communication content and perceived closeness to a randomly selected friend.

In the survey, each adolescent was asked for the name of six friends. The respondent provided information on each friend's age, gender, and place of residence; he/she also stated whether he/she met him/her for the first time at school or through extracurricular activities, in the neighborhood or online. The adolescent was also asked to indicate the length of time he/she had known him/her. The interviews were conducted face-to-face in the respondent's house by trained interviewers. For this study a friend from the list of six was randomly selected and the analysis refers to the communication channel used with the randomly selected friend.

10. Measures

10.1. Communication channel frequency

Communication channel was measured by an item that asked the adolescent to indicate his/her most frequent channel of communication with the friend named. Possible responses were: face-to-face, phone (including landline and cell phone) and online (including email and Instant messaging). From the responses three dummy variables were created: face-to-face, phone and online communication. As the three dependent variables have two responses categories, in the multivariate analysis logistic regression was used to test the study hypotheses.

10.2. Communication content

Content of communication was measured by two variables that tapped into the extent of personal and non-personal communication. Adolescents were asked to indicate whether they did or did not discuss a list of topics with the friend they named. From the responses two scales were created, one of personal issues regarding parents and family, friends, and romantic relationships. The second included non-personal topics such as sports, TV programs, music, fashion and dress. Using the items, two scales were built one is measuring personal content of communication and the other measuring non-personal content of communication. The scales were built by summing the items; the corresponding Cronbach's alphas were .72 and .67, respectively.

10.3. Friendship origin

The survey included a measure of the place where respondents met the person they named for the first time: through the Internet, at school, in extracurricular activities, or in the neighborhood. From the responses we computed a measure distinguishing that setting. A dummy variable was created indicating the place of the first meeting; the relevant categories were face-to-face (neighborhood, at school, in extracurricular activities) and online (through chat rooms, bulletin boards, or email use).

10.4. Friend's residence

Adolescents were asked for the place of residence of the friend. Possible responses were: in the same neighborhood, in the same

city, in another city in Israel. From the responses, three dummy variables were created: living in the same neighborhood, living in a different neighborhood of the same locality, and living in a different locality.

10.5. Friendship closeness

Perceived closeness was measured using measures of tie strength developed by Mardsen and Campbell (1984). The measure has been used in previous studies of youth online relationship formation and quality (Mesch & Talmud, 2006; Valkenburg & Peter, 2007a). Referring to the friend named, respondents were asked to indicate how close they felt to him/her, how important he/she was for them, how far they would ask him/her for help, and how far they trusted him/her. Responses were given on a 5-point Likert scale. The items were subjected to a factor analysis using varimax rotation. One factor was found and a scale was built with reliability $\alpha = .811$. Next the scale was built by a simple summing of the responses over all the items.

10.6. Internet use

Adolescents were asked to report the number of hours a day they used the Internet. The variable was introduced as a continuous measure. Secondly, adolescents were asked to indicate how long they had access to the Internet from home, and the variable was introduced as a continuous measure.

In the multivariate analysis we controlled for each adolescent's age, gender, nationality (0 = Israeli Arab; 1 = Israeli Jew).

11. Results

11.1. Descriptive results

Of the 1100 adolescents contacted, 1055 agreed to participate in the study; 66.8% ($n = 705$) of respondents reported using the Internet regularly and this sub-sample was used. Respondents' average age was 15.53 years (S.D. 1.67); girls and boys were almost equally represented (51% boys). In religious denomination, 79% were Israeli Jews (Table 1).

In socioeconomic status, average father's education was 12.63 years (S.D. 3.50) and average mother's education was 12.52 years (S.D. 3.37). In family status, 86.8% reported that their parents were married and 13.2% of parents were separated or divorced.

As communication channel frequency with the contact mentioned, 29.1% of the sample contacted face-to-face, 51.4% by phone, and 19.5% online. Respondents were asked where the first contact was met: 60% first met the friend at school, 28% in the neighborhood, and 12% online. As to place of residence of the first contact, 53.4% indicated that the contact lived in the same neighborhood, 36.3% indicated a different neighborhood but the same locality, and 10.3% indicated a different locality.

Table 1
Description of the sample

Variable name	Mean (S.D.)	Range	N
Age	15.53 (1.67)	12–18	698
Gender (1 = male)	.51 (.50)	0–1	697
Nationality (1 = Jew)	.79 (.40)	0–1	704
Length of internet connection	3.45 (1.54)	1–5	704
Internet daily use	3.36 (2.38)	0–8	704
Personal content	2.34 (1.42)	0–4	698
Non-personal content	2.22 (1.21)	0–4	698
Contact closeness	13.9 (1.85)	0–16	698
Contact duration	3.76 (.64)	1–4	704

Adolescents reporting having online friends did not differ in age from those reporting not having online friends (15.51 and 15.65 years; p n.s.). Gender differences existed, as a higher percentage of boys than girls reported having online friends. Of those reporting having a friend who was met online, two thirds were boys and only one third was girls.

11.2. Multivariate results

A series of logistic regressions were used to investigate the factors associated with the choice of communication channel by adolescents. The first model presents the results for face-to-face communication (Table 2).

From the results, certain contextual factors seemed related to the likelihood of face-to-face communication. Content of communication played an important role, and both personal and non-personal content increased the likelihood of face-to-face communication. Place of residence of dyadic friends proved statistically related as well. When communicators reported living in the same locality the odds of face-to-face communication were higher than when they did not live in the same locality. This provided empirical support for H1, which expected physical proximity and access to increase the likelihood of face-to-face communication. This model evinced partial support for an effect of characteristics of the relationship as the place where the relationship started was related to the use of face-to-face communication. The likelihood of this kind of communication was lower when the origin of the relationship was online than when the friends met in the neighborhood. For individuals who knew each other from school the likelihood were not statistically different from what it was when they met in the neighborhood. Another characteristic of the relationship, namely length of acquaintance, seems not to have affected the likelihood of communicating face to face, once relationship origin and proximity were controlled.

An important result is the effect of relationship closeness. Individuals who felt close to each other and trusted each other were more likely to communicate face to face, even when the content of communication and location were controlled (Table 3).

Factors related with the preference of phone communication were investigated as well. According to the logistic regression model, phone communication was less likely to be used for personal communication. The effect of location on phone

Table 2
Logistic regression predicting face-to-face communication

Variable name	Parameter estimate	Standard error	Odds ratio
Age	−.060	(.061)	.942
Gender (1 = male)	.288	.207	1.344
Nationality (1 = Jew)	−.360	.300	.698
Personal communication	.213[b]	.087	1.238
Non-personal communication	.461[b]	.094	1.586
Same neighborhood	.481	.331	1.618
Same locality	.656[a]	.337	1.928
Different locality	–	–	–
Met internet	−1.101[b]	.441	.333
Met school	−.047	.029	.954
Met neighborhood	–		
Duration	.177	.156	1.194
Closeness to contact	.107[b]	.054	1.113
Daily internet use	.091	.052	1.095
Time of internet use	.053	.066	1.055
Constant	−2.154	1.383	.116
N	652		
Chi square	98.33		
−2 log likelihood	649.248[b]		
Nagelkerke pseudo R square	.208		

[a] $p < .005$.
[b] $p < .01$.

Table 3
Logistic regression predicting phone communication

Variable name	Parameter estimate	Standard error	Odds ratio
Age	−.061	.070	.941
Gender (1 = male)	.212	.248	1.236
Nationality (1 = Jew)	.651	.357	1.918
Personal communication	−.245[a]	.106	.783
Non-personal communication	.080	.112	1.084
Same neighborhood	.133	.435	1.142
Same locality	.600	.428	1.822
Different locality	–	–	–
Met internet	−.010	.523	.990
Met school	−.019	.032	.982
Met neighborhood	–	–	–
Duration	.164	.202	1.178
Closeness to contact	−.282[b]	.058	.754
Daily internet use	−.081	.053	.922
Time of internet use	−.040	.079	.961
Constant	−.330	1.409	.719
N	649		
Chi square	61.096		
−2 log likelihood	500.81		
Nagelkerke pseudo R square	.156		

[a] $p < .005$.
[b] $p < .01$.

communication was statistically non-significant, indicating that phone communication was neither less nor more preferred by individuals residing near or far from their contact.

Relationship origin was not statistically significant either, indicating no difference in the preference for phone communication by individuals whose relationship started at school, in the neighborhood or online. But the effect of relationship closeness was statistically significant and negative ($−.282$, $p < .001$), indicating that when location, relationship origin and communication content were controlled, individuals who felt that their relationship was distant were more likely to use phone communication than individuals who felt that their relationship was close (Table 4).

Next, the logistic regression model predicting online communication is presented. The results show that like to face-to-face communication, communication content, place of residence and characteristics of the relationship were related to the likelihood of preferring online communication. An important finding is that the likelihood of preference of online communication was higher when communication content was non-personal ($b = .251$,

Table 4
Logistic regression predicting internet communication

Variable name	Parameter estimate	Standard error	Odds ratio
Age	−.203[b]	.063	.816
Gender (1 = male)	.368	.215	1.445
Nationality (1 = Jew)	1.163[b]	.349	3.199
Personal communication	.182	.096	1.200
Non-personal communication	.251[b]	.096	1.285
Same neighborhood	−.763[a]	.340	.466
Same locality	−.061	.340	.941
Met internet	1.658[b]	.456	5.248
Met school	−.019	.030	.981
Met neighborhood	–	–	–
Relationship duration	−.506[b]	.157	.603
Closeness to contact	−.065	.059	.937
Daily internet use	.195[b]	.041	1.216
Time of internet use	.085	.068	1.089
Constant	2.259	1.422	.112
N	653		
Chi square	124.211		
−2 log likelihood	629.609		
Nagelkerke pseudo R square	.256		

[a] $p < .005$.
[b] $p < .01$.

$p < .01$). Place of residence was also related, and individuals living in the same neighborhood were less likely to prefer online communication than individuals living in different localities. Online communication was more likely to be used for contacts living at a distance than for local contacts. Characteristics of the relationship were also related to the likelihood of online communication. When the origin of the relationship was online, the likelihood of online communication was higher than when the contact was met in the neighborhood. The non-significant effect of the parameter estimate of relationships that started at school indicates that the likelihood of online communication for these relationships did not differ significantly from the likelihood of online communication for relationships that originated in the neighborhood.

One important finding refers to characteristic of the relationship. The longer individuals were acquainted, the less likely they were to communicate online. As in the previous models, culture played a role as well. Israeli Jews were more likely than Israeli Arabs to prefer to communicate online, even controlling for other characteristics such as age, gender, communication content, place of meeting, duration of the relationship and Internet use characteristics.

12. Discussion

This study set out to investigate factors associated with adolescents' preferences for communication channels. It rested on a contextual framework that suggested that location, relationship origin, relational strength, and communication content would influence communication channel choice in a representative sample of young adolescents who were Internet users. The results show that beyond the inherent characteristics of communication channels, contextual variables measuring location of the communicators, relationship origin, closeness of the relationship and content are influential in choice of communication channel.

The first hypothesis expected that location to shape communication-channel choices. Specifically, individuals residing in proximity to their contact were deemed more likely to communicate face to face, and individuals residing in distant localities would prefer to communicate by phone and online. The hypothesis was supported for face-to-face communication and online communication. Living nearby was associated with a preference for face-to-face communication, and living in different localities was related to preference for online communication. Phone communication seems to be a channel liberated from locality constraints as its use was not associated with distance.

The second hypothesis expected a clear difference in channel choice according to relationship origin, and social contact created online to be more likely to take place online and over the phone than social contact created face to face. The results indicate that relationship origin played an important role in the choice of communication channel. When the friend was met face to face, at school, or in the neighborhood, the preferred communication channel was face to face; when the friend was met online the preference was online. This finding seems to be at odds with studies indicating that online ties tend to migrate to face-to-face settings (Parks & Floyd, 1996). It is more consistent with a recent study showing little movement of relationships from the online realm to face to face, and adolescents' maintaining two almost separate social networks: online and offline (Bryant et al., 2006). These findings may be provisional, reflecting an early phase of Internet integration into everyday activities and life. One finding of the present study supporting this alternative explanation is the negative effect of duration of relationship on online communication; the less time a respondent knew a person, the more likely was online communication. With accumulated experience of the Internet,

and longer duration of online social relationships, adolescents might become more confident and add online ties to their face-to-face meetings. This finding might reflect geographical constraints as well, as adolescents are geographically restricted but as they grow older they gain more physical access to friends hitherto only online.

The next two hypotheses concerned relationship intensity, namely duration and closeness of the relationship (Campbell & Lee, 1992). Within this contextual framework, relationship duration was expected to be associated with choice of communication channel. Specifically, the longer the relationship, the more likely individuals were to communicate using richer channels (face-to-face and phone) and the less likely to communicate using leaner channels (online communication). Closeness to the contact was also expected to affect choice of communication channel. The findings tend to support the intensity hypothesis. Face-to-face communication proved more likely when a higher closeness was reported. Apparently individuals who perceived their relationships as close, trustful and reliable communicated face to face. Phone communication was more likely when individuals reported being more distant from their contacts, and online communication was more likely for individuals who had no been long acquainted. Close friends preferred direct communication (face to face), which afforded them opportunities to fully express not only their thoughts but also their emotions. Shared history may reduce the need for a more protective environment, as good friends do not feel the need to hide emotions, and, apparently feel comfortable expressing their inner concerns unmasked in this medium. But when the relationship is more distant a mediated communication (channel) is preferred as it may provide a better environment to hide information, or to avoid embarrassment. This explanation seems to be at odds, with Bargh and McKenna (2004) view that the anonymity of the online communication provides a better environment for the disclosure of intimate information. Unlike their study, which was conducted among strangers communicating online, the focus here was on the maintenance of existing ties perceived as lying on differential levels of closeness. This difference explains the inconsistency of our finding with that of McKenna and Bargh (2005).

The goal of any communication is to provide information. We differentiated between personal and non-personal communication, and probed which channel was preferred for each communication content. The likelihood of preferring face-to-face communication was related to personal and non-personal communication alike. The findings suggest that adolescents prefer a non-mediated rich channel of communication more than the phone and online. Interpersonal communication and a communication session can hardly be thought of as limited to only one type of communication. The result may reflect the circumstance that in a face-to-face meeting personal, but also less personal topics are discussed; even if the goal of the meeting was personal, other topics are very likely to have been discussed as well. Yet interpersonal communication is complex, and the results on preferences for other channels showed that phone communication was preferred for non-personal topics. In the model predicting online communication the parameter estimates were statistically non-significant. As for the last model, the implication of the finding is that communication content does not predict the use of online communication. This finding might indicate that Internet use is not associated with a need to provide specific information.

13. Study limitations

The interpretation of the results calls for some caution. First, the strength of the current study is its representative sample of the adolescent population. But its weakness is that the survey is cross-sectional, a design that provides insights into the association of the variables but not the cause. One uncertainty due to the design limitations is whether closeness of the contact determines channel choice, or whether previous channel choices are a determinant of the closeness of the tie. The finding of the relevance of closeness in channel choice is important in itself, but it is only a first step for future studies that should explore this issue more in depth.

An additional limitation is the measurement of content of communication. This study applied a comprehensive list of topics, but the use of a list does not furnish extra information on more detailed conversations held by the communicators. In future studies it might be more useful to add a list of scenarios of situations in which the extent of intimate information is manipulated, and to investigate how that these different scenarios influence the choice of a communication channel.

14. Conclusions

In general, the findings demonstrate the need to integrate into communication models characteristics of the relationship, not just of the channel of communication. As individuals communicate they make choices based on the technological possibilities or affordances of the medium, but also on their own interactional characteristics, such as relationship duration, relationship origin, distance, and communication content.

This study makes an important contribution to the study of youth communication in a multi-channel environment. First, it expands previous studies in the field of communication that focused on the characteristics of the medium and shows the need to incorporate contextual characteristics of association in explaining the choice of different channels of communication. Second, it provides further evidence to studies that show that in a multi channel communication environment adolescents are conducting parallel relationships: with face to face friends and online friends. Third, it provides further evidence to recent studies that show that perceived closeness to a friend affects whether the communication will be conducted mostly online or face to face.

The incorporation of these contextual variables, and of differences in communication with known and not known individuals, might lay down a solid basis for the development of more comprehensive frameworks that provide holistic interpretations of the consequences of face-to-face, phone, and online communication. In particular, the understanding of the impact of communication channel on access to social support and sociability.

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