TO KNOW THAT YOU ARE NOT ALONE: THE EFFECT OF INTERNET USAGE ON LGBT YOUTH'S SOCIAL CAPITAL

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ABSTRACT

This study's purpose is to examine the relations between LGBT (lesbian, gay, bisexual, and transgender) youths' Internet usage and their social capital. Previous research has shown that Internet use assists actors with similar background and interests in forming bonding social capital. Additionally, it has been found that Internet use can assist actors from dissimilar background in forming bridging social capital. This study aims at extending these findings to LGBT youth, who may especially benefit from having a supporting social network while coping with the challenges of forming their sexual orientation/gender identity. For this purpose, an Internet survey was launched, with 82 participants, who were users of forums in the Israeli Gay Youth organization website (IGY). The survey included three measures of Internet use (i.e., amount of time spent in Internet forums, content posting activity, and emotional investment in forums), and questionnaires estimating the degrees of bridging and

bonding social capital. In general, we found a positive association between forum usage and social capital. Inasmuch as Internet forum use was more intensive, the reported social capital increased. Furthermore, our findings suggest that more passive forum usage may be sufficient for forming bridging social capital, whereas bonding social capital may necessitate more active usage. These findings suggest that Internet forums designated for LGBT adolescents are important resources that can help them to cope with the special challenges they face at this turning point for their identity, deem to decrease the risk of detrimental outcomes, such as depression or even suicide.

INTRODUCTION

For quite a number of lesbian, gay, bisexual, and transgender teenagers (LGBTs), adolescence is typically a period of hardship while trying to socially integrate with their peer group, families, and communities (Gray, 2009; Shilo, 2007). Typically, these teenagers face harassment and bullying on a virtually daily basis. At the beginning of this decade, numerous cases of teenage and youth suicide were ever-present on the news in the United States and around the globe. In these cases, youth were reported to suffer from prolonged bullying due to their sexual orientation. An article in the Los Angeles Times (2010) reported that "... Seth's [Walsh, 13] suicide — along with the suicides of Tyler Clementi, 18, Billy Lucas, 15, and Asher Brown, 13, all within two and a half weeks — is now part of a national conversation about the consequences of being harassed and being young and gay" (Curwen, 2010). A partial explanation for this behavior may be due to the emergence of an online lifestyle, promoting the violation of teenage privacy by harassment and bullying via the Internet (Mesch & Talmud, 2010a). Nonetheless, the Internet has also an important positive role to play in the struggle LGBT teenagers have with adolescence issues (Drushel, 2010; Gray, 2009; Laukkanen, 2007; Pullen, 2010). Some public figures, social organizations, and even businesses use the Internet to spread positive messages of hope and optimism toward LGBT adolescents (most notably, the "It Gets Better" project).

These contrasting themes raise some questions regarding the association between LGBT teenagers' Internet use and their *social capital*. These

questions are especially important because social capital could be viewed as a resource specifically vital for LGBT youth, who may benefit from having a supporting social network while coping with the challenges of forming their sexual orientation/gender identity. Recent research shows that the use of forums and chat venues on the Internet increases the stock of *social capital* of teenagers (see summary in Mesch & Talmud, 2010a). In the general population, teenagers tend to take advantage of online social networks to make new social connections and to strengthen and maintain existing social ties. However, to what extent do these general findings apply to various groups within the teenager population? More specifically, this study aims to examine the degree to which Internet usage is associated with LGBT youths' acquisition of social capital.

THEORETICAL PERSPECTIVES

Social capital is defined as a set of all the properties of the social structure that enable and support an actor in perusing a particular action (Lin, 2001). The literature draws an analytic distinction between two main types of social capital: *bonding* social capital and *bridging* social capital. These two types are not mutually exclusive, as people may possess the two types of social capital simultaneously (Putnam, 2000; Talmud & Mesch, 1997; Uzzi, 1997).

Bonding social capital is a product of mutual trust and cooperation within a social network, and is reinforced by shared identity and similar experience. By and large, bonding social capital is found in dense social networks, which are characterized by the homogeneity of their members' attributes and shared identity. This type of social capital typically provides social and emotional support. By contrast, bridging social capital is widespread in fragmented networks in which actors are of heterogeneous background, and are structured by relatively loose connections between members. Burt (1992) and Putnam (2000) argue that variability among network members generates a greater variety of resources available to the members compared to members of a network characterized by bonding social capital. Available resources are, for example, a wide range of information, exposure to various opportunities, fruitful social connections, etc.

As far as the population at the focus of this study, we expected that using the Internet should involve a dynamic between bridging and bonding social capital, such that bridging social capital could be the basis for

forming bonding social capital (Mesch & Talmud, 2006, 2010a). By this rational, LGBT teenagers form online social networks that provide inter-action between actors of varying socio-economic backgrounds: religious, ethnic, geographic, and even national. Bridging social capital could enhance these actors' social outlook, widening their horizons, enabling them to access information and new resources (Williams, 2006). However, in the case of LGBT teenagers and youth, these social networks revolve around the LGBT common sexual orientation/gender identity. This could serve as a base for the formation of bonding social capital, as it is typically structured on *homophily* (affinity to similar others, and association with them; Mesch & Talmud, 2006). In the next section, we review the literature regard-ing the relations between social networks, social capital, and Internet usage in the context of youth and LGBT teenagers.

Social Networks, Internet Use, and Social Capital

In recent years, extensive research has been conducted on the ways informa-tion and communication technology shapes individuals' online and offline social networks and the ways in which individuals operate within them. These studies show that communities become more embedded in social net-works rather than in tightly knit groups (e.g., Wellman, Haase, Witte, & Hampton, 2001). More specifically, community social relations, previously conducted solely in the public arena, are conducted these days in people's private homes as well (Lin, 2001; Wellman, 1999). Social interactions have dramatically shifted from face-to-face (FTF) to computer-mediated communication (CMC) via the Internet (Smith, Drucker, Kraut, & Wellman, 1999; Tarrow, 1998). In general, the use of CMC refers to partici-pating in chat room discussions, instant messaging, e-mail, virtual teams, virtual communities, and social networking (Stern & Taylor, 2007). CMC is often preferred over FTF communication because it is convenient, easy, and effective in many situations (Hardey, 2004). Moreover, previous studies have found a significant relationship between the consumption of CMC and an increase in an actor's social capital (Burke, Kraut, & Marlow, 2011; Burke, Marlow, & Lento, 2010; Mesch & Talmud, 2010a, 2010b; Wellman et al., 2001). These studies show that more extensive use of the Internet is related to significant increase in interpersonal connectivity, social engage-ment, and community attachment (Mesch & Talmud, 2010b). Thus, indivi-duals who use the Internet to create and maintain social ties expand their social capital.

LGBT Teenagers and Social Capital

Most LGBT teenagers define their sexual identity and disclose it to others during a process of *sexual identity formation* (Shilo, 2007). The ecological theory (Alderson, 2003) of sexual identity formation assumes that individuals operate in an environment having both cultural and social aspects. Human development takes place through adaptation to the environment. People develop and self-fulfill when there is rapport between themselves and their surroundings. However, upon mismatch they naturally try to change and adjust the environment to suit their needs, or else, change aspects in their personality to blend in. According to the ecological model of sexual identity formation, four environmental and social factors exist that impact the personal process teenagers go through: (1) Parents and family, for example, displeased parents may trigger strong feelings of depression, suicidal tendencies, and physical risk situations in their teenagers; (2) Culture and religion; for example, in conservative and religious societies, where there is almost no credible information, reliable data sources or support, social and familial sanctions may be applied toward adolescents; (3) Society's stance toward homosexuality; for example, if society protects the rights of the LGBT minority (e.g., laws prohibiting discrimination based on sexual orientation), it sends a message that homosexuality is on an equal footing with heterosexuality, which eases the process of sexual identity formation; (4) Close friends and social ties; for example, a peer group's positive attitudes and responses toward homosexuality could assist teenagers in the process of sexual identity formation to generate a positive, healthy self-image.

The *minority stress model* (Meyer, 1995, 2003) provides additional evidence for the ways environmental factors may affect the well-being of LGBT youth. Meyer (2003) argues that stress processes, including the experience of prejudice occasions, hiding and secreting, internalized homophobia, and expectations of rejection, create a stressful and hostile social environment that can cause mental health problems. However, when associated with opportunities for social support, affiliation, and coping deem amending the effect of stress, LGBT identity can be a source of strength (Branscombe, Schmitt, & Harvey, 1999; Meyer, 2003; Miller & Major, 2000). Thus, LGBT youth may especially benefit from increased bridging and bonding social capital while coping with the challenges of forming their sexual orientation/gender identity. They seek information on LGBT/queer identities to answer questions about sexual orientation, and they also look for information about social groups they may turn to when ready. This is an

example of the need for bridging social capital. Moreover, LGBT teenagers look to expand their social ties with the LGBT community and gay culture. They seek the company of other gays and the opportunity to make acquaintances. This is an example of the need for bonding social capital. In the next section we will discuss how the Internet offers diverse possibilities for making acquaintances and affiliating with relevant social groups for LGBT youth. Thus, the more sources of support they have (such as school counselors, professionals, LGBT youth guides), the better they cope with the special challenges they face at this turning point for their identity formation.

Internet Use, Social Capital, and LGBT Teenagers and Youth

Teenagers experience many issues during adolescence separation and individuation, such as keeping a distance from parents, forming ties and relationships with their peers, and formulating a positive, independent, healthy identity. In many cases, LGBT teenagers and youth confront similar issues in addition to the complexity of LGBT sexual identity formation (Shilo, 2007). But the distance from their immediate environment is greater because they are often "in the closet," worried about the ramifications of their sexual orientation/gender identity being revealed (Gray, 2009; Laukkanen, 2007). As a result, the size of their circle of friends may diminish, leading to feelings of loneliness and alienation. Maturing in such an environment may harm their social capital, while increasing their need for finding empathy and support in alternate circles. In other words, LGBT adolescents seek new social networks that could assist them in strengthening their self-esteem, handling what others think of them, finding a place in a peer group, and experiencing interpersonal relationships with others in this group. One of the common ways LGBT teenagers may be able to do that is via the Internet, and specifically forums designated for LGBT youth (Gray, 2009; Laukkanen, 2007). Scholars have produced a vast body of qualitative research regarding adult LGBTs and LGBT teenagers' online media usage and experiences (e.g., Alexander, 2002; Gray, 2009; O'Riordan & Phillips, 2007; Pullen & Cooper, 2010). The LGBT representations and narratives, as well as the "discursive practices" posted on the Internet are experienced as sources of information about and for young people who identify as LGBT (Friedman, 2006; Gray, 2009; Mittell, 2001). Namely, LGBT youth perceive online LGBT representations and narratives as more authentic and essential in the process of developing their

identities than fictionalized ones in popular media (e.g., television, cinema, literature). Gray (2009) argues that young people consider these representations and narratives "as both resonances of their own experiences and evidence that others like them exist beyond their local small communities" (p. 123). Thus, the Internet provides LGBT youth with resources for constructing what it means to be gay, lesbian, bisexual, transgender, or questioning. Moreover, queer online spaces are perceived as productive and safe spaces for young people who denote themselves as LGBT, and as such these spaces enable experiences that can support users' continuing subjective construction of LGBT identities (Laukkanen, 2007). Online media have become an inseparable part of Western life and the boundaries between cyberspace and offline became blurred (Gray, 2009; Karl, 2007; Mesch & Talmud, 2010a). Users exchange phone numbers and photos, meet face-to-face, friend one another, and date each other (Gray, 2009; Laukkanen, 2007; Shaw, 1997). Thus, oftentimes relationships and social tie that were formed online are fostered and maintained offline (Mesch & Talmud, 2010a).

Accordingly, we hypothesized that LGBT adolescents' usage of designated Internet forums would be related to their social capital. In other words, adolescents who use forums more extensively will exhibit higher degrees of social capital. Furthermore, the virtual environment assures anonymity and is home to many other adolescents who share similar experiences. Internet-based information also enables LGBT teenagers to find support and join LGBT social groups. Therefore, we predicted that LGBT adolescents' usage of designated Internet forums would be related to their degree of bridging and bonding social capital.

Hypotheses Specification

H1. Adolescents who report using Internet forums more extensively exhibit higher degrees of bridging social capital.

H2. Adolescents who report using Internet forums more extensively exhibit higher degrees of bonding social capital.

The Israeli Context

In this section, we present a short review of both LGBT youth and Internet usage in Israel. Since the early 1990s, an ongoing liberalization process of state policies concerning the life of LGBT people in Israel has made LGBT

rights a part of the wide-ranging modern civil rights system (Gross, 2001; Pizmony-Levy, Kama, Shilo, & Lavee, 2008; Weishut, 2000). In addition, like other Western societies, Israeli society has also experienced an increase in social acceptance of same-sex relationships (Frank & Mceneaney, 1999; Kama, 2000; Pizmony-Levy, Shilo, & Pinhasi, 2009). However, LGBT youth in Israel are not exempt from facing homophobia in their schools (Pizmony-Levy, Kama, Shilo, Lavee, & Pinhassi, 2004) and military service (Shilo, Pizmony-Levy, Kama, Lavee, & Pinhassi, 2006).

In the last decade both state authorities and LGBT civic movements have emphasized issues related to LGBT families, youth, and education; a trend similar to the one observed in US LGBT movements during the 1990s (for review see Bohan, Russell, & Montgomery, 2002). In Israel, as part of the growing attention to these issues, more resources have been invested in establishing specialized civic associations, aiming at diminishing the stigma through formal and informal education (for review see Pizmony-Levy et al., 2009). This study focuses on the Israeli Gay Youth (IGY) organization, one such organization that provides social support and aims to overcome heterosexism and homophobia. IGY operates online forums and social groups for LGBT teenagers ages 15−23. Pizmony-Levy et al. (2009) argue that the growing activities of IGY and other similar organizations can be considered as evidence for the importance of these organizations. Within a few years, IGY's activity grew from 12 to 29 active youth groups (growth rate of 242%; Pizmony-Levy et al., 2009). In 2008, IGY operated youth groups in every major population center throughout Israel, including cities in northern and southern parts of the country (Pizmony-Levy et al., 2009).

Internet usage in Israel has rapidly increased since the late 1990s (Mesch & Talmud, 2006). Only 11% of Israeli households reported having access to the Internet in 1998, comparing to 77% in 2010 (Central Bureau of Statistics, 2002, 2010). As Internet "early adopters," Internet use has increased among youth even more dramatically: from 35% in 2001 to 82% in 2010 (Central Bureau of Statistics, 2002, 2010). Moreover, the vast majority of youth reported that it use was mainly for social purposes, and even 14% of Israeli youth reported having friends that were met online (e.g., Mesch & Talmud, 2006, 2007). Moreover, it was found that these users tend to have a more dispersed and heterogeneous social network in terms of gender and age, rather than those who did not have online friends (Mesch & Talmud, 2007). As for parents' attitudes toward the Internet, Israeli parents tend to be are more skeptical about the possibilities that the Internet offers than US parents do. Fewer Israeli parents in comparison to American ones believe that the Internet is an important factor in their children's education

(Turow & Ribak, 2002). Finally, it was found that Israeli youth that are frequent Internet users do not spend less time with their parents. However, they report lower levels of closeness to their parents. It is likely that more intensive Internet use is related to more conflicts over privacy and computer time use within a household (Mesch, 2003).

Most studies of LGBT youth and their identities focus on LGBT populations in the United States and other Anglo-Saxon societies. Studying LGBT teenagers' Internet use in the Israeli context addresses the need to extend existing research in this area to another social context (Pizmony-Levy et al., 2009). Specifically, it provides an opportunity to explore Internet usage in a society that is more skeptic about the advantages of such usage for teenagers. At the same time, the Israeli context is similar enough to those in other Western societies to allow careful generalizations regarding the outcomes of Internet usage.

METHODOLOGY

Sampling

The research population in this study was the members subscribed to the social forums in the *Israel Gay Youth* (IGY) website, where the Internet survey was also published. The forums were not password protected, therefore everyone could read the content posted on them but only registered users could post content and comment on others' postings. Moreover, the forums and their content were supervised by forum managers, who were trained volunteer organization members aged 23 or older. In these forums, there were 7,436 subscribers as of the time of data collection. This number includes everyone who had ever registered to these forums as well as users who hold multiple user names.[1] The number of visitors who actually viewed the survey recruitment message was 1,851.

The total sample included 91 teenagers and youth who volunteered to participate in the research for the chance to be included in a prize-winning raffle (see Table 1), hence this study used a non-probability sampling method (convenience sampling).[2] We decided not to use the data collected from nine out of the 91 participants from IGY's website: two of the nine for reporting an unreasonable number of messages relative to the duration of their forum membership, and one due to deviance from age restrictions (the survey was designed for participants ages 15−21, however, this

Table 1.   Descriptive Statistics for the Background Variables in the Study.

Variable		
Gender	Male	28 (34.1%)
	Female	37 (45.1%)
	Other	5 (6.1%)
Age	Range	15−21
	M	17.25
	SD	1.56
Sexual orientation/gender identity	Gay	22 (26.8%)
	Lesbian	25 (30.5%)
	Bisexual	14 (17.1%)
	Transgender	2 (2.4%)
	Questioning	3 (3.7%)
	Other	4 (4.9%)

Note: For some of the variables the frequencies do not total to 100% because of missing values.

participant stated his/her age was 23). Six additional participants were excluded because they stated that they were straight, which made the relevance of their responses to this study uncertain. Of the final sample of 82 participants, 28 were males (34.1%), and 37 females (45.1%). Five participants (6.1%) indicated "other" in response to the question about gender and 12 participants skipped this question (14.6%). The participants' age range was 15−21 ($M = 17.25$, SD = 1.56). Based on the participants' own responses, the sample included 22 gay men (26.8%), 25 lesbians (30.5%), 14 bisexuals (17.1%), two transgenders (2.4%), and three who were questioning their sexual orientation/gender identity (3.7%). Four participants indicated that their sexual orientation/gender identity was different from the above categories (4.9%) and 12 participants skipped this question (14.6%).

Measures

Measuring Social Capital
Bridging social capital was measured using a 10-item scale, adapted from Williams (2006; reliability $\alpha = .90$). Two additional items adapted from the Ellison, Steinfield, and Lampe (2007; $\alpha = .87$). For all 12 items participants were asked to rate their agreement with each statement on a 5-point Likert scale (from 1 − strongly disagree to 5 − strongly agree). Examples of items from this questionnaire include: "I get to meet new people in the forums all the time"; "Communicating with people in forums make me feel I belong

to the Community"; "Communicating with people in forums reminds me that people throughout the world are connected"; "Communicating with people in forums triggers my interest in the way other people think." Internal consistency reliability for the 12-item combined bridging social capital scale was $\alpha = .88$.

Bonding social capital was measured using a nine items scale, adapted from a questionnaire used in Williams (2006; reliability was $\alpha = .84$). For all nine items participants were asked to rate their agreement with each statement on a 5-point Likert scale (from 1 — strongly disagree to 5 — strongly agree). Examples of items from this questionnaire include: "When I feel lonely, there are several people in the forums I can talk to"; "There are several people in the forums I rely on to help me deal with my issues"; "There is someone in the forums I can turn to for advice regarding very important decisions"; "If I urgently need to borrow 200 NIS [~$50], I know someone in the forums I could turn to" ($\alpha = .91$).

Usage of Internet Forums

The survey also included a questionnaire that measured the usage of the social forums in IGY's website. The items in the questionnaire were adapted from the original research by Ellison et al. (2007). The questionnaire included three self-report items, which measured how active participants were in the forums. The first two items measured *posting activity*: "on what date did you register to the forums?" and "how many messages have you posted since you became a member of the forums?" Participants were given detailed instructions for retrieving this information from their personal profiles. We recoded the answers to the first item in terms of number of days since registering the forums. To calculate this measure we divided the number of messages posted by number of days since registration. The third item estimated the *time spent in the forums*: "how much time each day do you surf in the forums?" Posting activity and time spent in forums were not significantly correlated (see Table 2). This suggests that these two measures reflect separable aspects of forum usage with posting activity estimating more active forum usage (e.g., creating content, posting messages, responding to others' postings) and time spent in forums estimating more passive forum usage (i.e., reading others' content and postings).

The questionnaire also included five additional items that measured the emotional attachment to the forums. Examples of items from this questionnaire include: "Surfing the forums has become part of my daily routine"; "I feel out of touch after a long hiatus from surfing the forums"; and "I would be sad if IGY forums were to shut down" ($\alpha = .83$). These items

Table 2.   Averages, Standard Deviation, Reliability Coefficients
(Cronbach's Alphas) and Zero-Order Correlation Matrix for Main
Variables.

	M (SD)	1	2	3	4	5	6	7
1. Bridging social capital	4.00 (.700)	(.88)						
2. Bonding social capital	3.12 (.987)	.450**	(.91)					
3. Emotional investment in forums	4.25 (.790)	.689**	.438**	(.88)				
4. Time spent in forums	3	.446**	.141	.579**	(−)			
5. Posting activity	2.683 (4.291)	−.030	.249*	.099	.159	(−)		
6. Parent-adolescent relationship	3.809 (.863)	−.129	.049	.040	−.163	−.094	(.84)	
7. Self-esteem	3.874 (.976)	.054	.251*	.065	.031	.186	.379**	(.93)

*$p < .05$, **$p < .01$.

were used to create the measure *emotional investment in the forums* that esti-
mates the perceived importance of the forums in the participant's life.

Control Variables
Previous studies, focusing on Internet usage depict two main theoretical
lenses: the *social needs theory* and the *social compensation theory*. The *social
needs theory* (Buhrmester, 1996; Wolak, Mitchell, & Finkelhor, 2003) claims
that individuals are motivated to form social ties in order to satisfy their
needs (e.g., intimacy, self-affirmation, socialization, friendship). Shy teen-
agers with low self-esteem and social anxiety have difficulty in forming and
maintaining intimate face-to-face relationships (Mesch, 2001), thus leading
them to form online social connections instead. On the other hand,
the *social compensation theory* focuses on the relational quality between
parents and their kids, and the way these relations drive teenagers to form
new friendships (Mesch & Talmud, 2006). Teenagers who are embarrassed
to share information with their peers about their conflicts and tens inter-
actions with their parents (Mesch, 2009; Wolak et al., 2003) find it difficult
to form face-to-face relationships with their peers. With their social
needs unfulfilled, these teenagers tend to look for compensation (Helsen,
Vollebergh, & Meeus, 2000) by seeking online anonymous relationships.
Based on studies on the ways teenagers connect to one another via the

Internet (Mesch, 2009; Mesch & Talmud, 2010a), control variables included self-esteem and the relationship between the teenager and his/her parents.

Self-esteem was measured using seven items from Rosenberg's (1989) Self-Esteem Scale (reliability was $\alpha = .88$; Fleming & Courtney, 1984). Examples of items from this questionnaire include: "I feel I have some good qualities"; "I can do things as well as most other people"; "All in all I am satisfied with myself"; "I have a positive attitude toward myself" ($\alpha = .93$).

Parent-adolescent relationship was estimated with a six-item scale as done in research by Mesch and Talmud (2006), in which the internal consistency reliability was $\alpha = .88$. Three items measured how close the teenagers felt to their parents and the family atmosphere at home. Examples of items from this questionnaire include: "How willing are your parents to listen to you?," "How close do you feel to your parents?" ($\alpha = .88$). The other three items measured parent-adolescent conflicts. The internal consistency reliability as reported in the original study was $\alpha = .77$. Participants were asked to report the degree to which their parents sworn, yelled at them, and hit them ($\alpha = .76$). Finally, the participants were asked about demographics such as gender, age, place of residence, sexual orientation/gender identity, religion, degree of religiosity, and ethnicity.

Procedure

Data gathering was conducted using an Internet-based survey. A link to this survey was posted in the forum "*News and Updates*" on IGY's website. The survey began with a letter addressed by the research team to the participants explaining the aims of the study, information about the survey itself and a consent form to be approved before proceeding to the core of the survey. The survey included the six questionnaires listed above in this order: (a) Bridging Social Capital, (b) Bonding Social Capital, (c) Internet Forums Usage, (d) Parent-Adolescent Relationship, (e) Self-Esteem, (f) Socio-Demographic Measures. Finally, participants had the opportunity to sign up for a raffle to win a token prize. Participants had been assured of complete anonymity and secrecy.

RESULTS

Looking at the descriptive statistics (see Table 2), the average bridging social capital score was 4.00 (SD = .70) and average bonding social capital

score was 3.31 (SD = .99, near mid-point). In addition, the mean score on the emotional involvement in the forums showed that the participants felt an intense emotional tie to the forums ($M = 4.25$, SD = .79), and the median value of the reported average time spent in forums by the participants was one to two hours per day. This level of activity is high when taking into account that this is a relatively specific activity out of all possible activities on the Internet. Participants posted, on average, 2.68 message per day (SD = 4.29). Moreover, participants reported having relatively good relations with their parents and a positive family atmosphere ($M = 3.80$, SD = .86). Finally, the participants in the survey had typically high self-esteem ($M = 3.87$, SD = .98).

The zero-order correlation matrix between the study variables (see Table 2) shows that the quality of parent-adolescent relationship was not significantly related to the main research variables. This suggests that the correlation found between the measures of forum usage and social capital do not reflect the impact of parent-adolescent relationship, that is, this variable is not a likely confounder in this study.

To test our hypotheses, we conducted an Ordinary Least-Squares Regression model, estimating bridging social capital (see Table 3) and bonding social capital (see Table 4).[3] We hypothesized that there would be a positive relation between adolescents' Internet forum usage and *bridging social capital* (H_1). Table 3 shows that the standardized regression coefficient for emotional investment in the forums is positive and statistically significant in

Table 3. OLS Regression Coefficients: Bridging Social Capital.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Emotional investment in forums	.689*** (.074)		.650*** (.091)	.545*** (.106)		.560*** (.101)
Time spent in forums		.446*** (.046)	.070 (.046)	.061 (.048)		.064 (.047)
Posting activity				−.099 (.015)		−.113 (.015)
Self-esteem					.054 (.086)	.093 (.063)
N	72	71	71	59	69	62
R^2	0.475	0.199	0.480	0.334	0.003	0.374
Adj. R^2	0.468	0.188	0.465	0.298	−0.012	0.330

Note: Standardized beta coefficients; Standard errors in parentheses.
***$p < .001$.

Table 4. OLS Regression Coefficients: Bonding Social Capital.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Emotional investment in forums	.438***		.358**	.420**		.453**
	(.136)		(.162)	(.196)		(.186)
Time spent in forums				−.255		−.226
				(.088)		(.086)
Posting activity		.249*	.213	.253*		.198
		(.029)	(.027)	(.027)		(.027)
Self-esteem					.251*	.224
					(.123)	(.116)
N	71	63	63	59	69	62
R^2	0.192	0.062	0.189	0.192	0.063	0.279
Adj. R^2	0.180	0.047	0.162	0.149	0.049	0.229

Note: Standardized beta coefficients; Standard errors in parentheses.
*p < .05, **p < .01, ***p < .001.

all models. Therefore, higher emotional investment in the forums is associated with greater bridging social capital, controlling for time spent in forums, posting activity, and self-esteem. Furthermore, the regression coefficient for time spent in the forums is positive and statistically significant in Model 2. In other words, the amount of time spent in the forums is associated with greater bridging social capital. However, the significant relationship between time spent in forums and bridging social capital disappeared once we added emotional investment in forums in Model 3. Together with a significant correlation between time spent in the forums and emotional investment (see Table 2), this finding suggests that the relation between time spent in forums and bridging social capital is mediated by emotional investment in the forums (Baron & Kenny, 1986). Results of the Sobel test support this possibility ($z' = 4.210$, $p < .001$). These results are consistent with the interpretation that time spent in forums predicts the degree of bridging social capital, and that it does so by strengthening emotional investment in forums.

We also hypothesized that there would be a positive relations between adolescents' Internet forum usage and *bonding social capital* (H_2). Table 4 shows that the regression coefficient for emotional attachment to the forums is positive and statistically significant in all models. Therefore, higher emotional investment in the forums is associated with greater bonding social capital, controlling for time spent in forums, posting activity, and self-esteem. Furthermore, the regression coefficient for posting activity is positive and statistically significant (Model 2). Put differently, the number

of messages posted in the forums is associated with greater bonding social capital. However, the significant relationship between posting activity and bonding social capital disappeared once we added emotional investment in forums in Model 3. Together with a significant correlation between posting activity and emotional investment (see Table 2), this suggests that the relation between posting activity and bonding social capital is mediated by emotional investment in the forums (Baron & Kenny, 1986). Yet, the Sobel test results were not statistically significant ($z' = .740$, n.s.). The relationship between posting activity and bonding social capital became somewhat weaker and not significant once we added self-esteem in Model 6. However, because this reduction was not statistically significant ($z' = 1.284$, n.s.), as well as the zero-order correlation between posting activity and self-esteem; we conclude thus that there was no reliable evidence, indicating that the relationship between posting activity and bonding social capital can be explained by self-esteem.

DISCUSSION AND CONCLUSIONS

The purpose of this study was to examine the relationship between the usage of Internet forums by LGBT teenagers and youth and their social capital. Based on previous research, we hypothesized that Internet usage among LGBT adolescents would be associated with higher degree of social capital, both bridging and bonding. In general, the findings support the research hypotheses. Time spent in forums and emotional investment was linked to higher degrees of bridging social capital. Moreover, we found evidence that the relationship between time spent in forums and bridging social capital was mediated by emotional investment in the forums. In other words, teenagers who used the forums more extensively (but in a passive manner) exhibited more emotional investment in the forums, and they reported to possess greater degrees of bridging social capital. Furthermore, levels of posting activity and emotional investment in forums (but not time spent in forums) were linked to greater degrees of bonding social capital. Teenagers who posted more messages in the forums (thus using the forums actively) and reported higher degrees of emotional investment exhibited higher degrees of bonding social capital.

What could explain the slightly differential pattern of prediction of bridging and bonding kinds of social capital? We believe that a key distinction here might be that between a more passive use of the forums, including

lurking (represented by time spent in forums), and a more active usage (proxied by posting activity). Bridging social capital is based on weak ties, while bonding social capital is based on a more active Internet usage (Ellison et al., 2007; Mesch & Talmud, 2010b). Weak ties tend to connect actors from different groups and background (Granovetter, 1973; Mesch & Talmud, 2006). Bridging social capital is the *connections* and the associated benefits stemming from these ties, which are situated between otherwise disconnected actors. Burt (1992) refers to "non-redundant" ties between otherwise disconnected social circles as facilitating bridging capacity between "structural holes." These ties deem to provide individuals with an advantageous social position within their networks (Burt, 1992). Structural holes facilitate actor's ability to accrue bridging social capital. This capacity is typically found within sparse, heterogeneous social networks, in which actors are linked by weak ties.

The finding that LGBT teenagers' posting activity was positively associated with bonding social capital can be linked to the notion of "strong ties" (Mesch & Talmud, 2006). Bonding social capital is based on "strong ties" and cohesive groups (Mesch & Talmud, 2006). Granovetter (1973) defines tie strength as "a combination of the amount of time, the emotional intensity, the intimacy, and the reciprocal services which characterize the tie" (p. 1361). More specifically, empirical evidence has shown that emotional intensity and perceived closeness are the best predictors of tie strength (Marsden & Campbell, 1984). Statistically, strong ties tend to connect individuals within the same group. Mesch and Talmud (2006) found that the content of online communication was related to ties' strength. More specifically, personal and intimate communication was transferred via strong ties. These findings highlight the importance of reaching intimacy in interpersonal relationships as a precondition for the formation of strong online ties. Thus, intimacy is needed for trust, and reciprocity is necessary in any close online relationship (Mesch & Talmud, 2006). In other words, in order to increase and maintain bonding social capital, active usage of forums, based on reciprocity, cooperation and feedback, is a necessity.

Another explanation for the results regarding bonding social capital may be the need of LGBT teenagers to find other similar youth for mutual social connections (Drushel, 2010; Gray, 2009; Laukkanen, 2007). Bonding social capital is the product of mutual trust' identification, and cooperation within a social network, and is reinforced by *shared identity and similar experience* (Mesch & Talmud, 2010a; Talmud & Mesch, 1997; Uzzi, 1997). This explanation corresponds to previous research on online social ties and

homophily (Mesch & Talmud, 2006) and research on LGBT common identity formation (Marciano, 2009).

One of the contributions of this study is that it addresses the need to extend existing research on LGBT teenagers' Internet use beyond the context of the United States and other Anglo-Saxon societies. Another contribution is that unlike most studies of LGBT youth, our methodology enables studying those who are still "in the closet" because the survey was Internet-based and *totally* anonymous. Yet, future studies should use a larger sample and additional groups and environments, such as social network sites (e.g., Facebook) and Internet dating sites. Moreover, future studies should use a dynamic analysis of panel data, thus discerning precise mechanisms of causality over time. In particular, future research should draw a more precise distinction between the ties *between the user and the forum*, and the ties *among the users*.

Teenagers and youth experience hardship in their attempts to socially integrate with their peer group during adolescence (Alderson, 2003; Meyer, 1995, 2003). Based on the existing literature, we postulate that social capital is a valuable resource that could assist this group to deal with the developmental challenges they face. Social capital helps to illustrate the role of Internet forums in accruing resources. LGBT teenagers who used the forums more extensively were more likely to report that interacting with people in the forums made them interested in things that happen outside of their immediate environment, form new ties and experience novel ideas; all of these made them feel like a part of a larger community. Similarly, LGBT teenagers who used the forums more intensively were more likely to report that there are people in the forums that they can turn to for advice and trust to help solve their problems; they feel comfortable talking to about intimate personal problems; and that would help them fight an injustice. The current study indicates that Internet forums have assisted this population in tackling the special challenges and detrimental obstacles they face at this turning point for their identity.

NOTES

1. Aside for these data, no additional information was available on the IGY website users as a whole (e.g., gender, age-based, or sexual orientation distribution).

2. The dataset included 28 additional participants from non-designated (general population) Internet forums on the "Fresh" social network site (fresh.co.il). We collected these data as part of an attempt to form a comparative group composed

of straight teenagers. However, after response rate in this population turned out to be too low, we terminated data collection for this comparative group and excluded these participants from the statistical analyses.

3. We verified that the regression models do not suffer from heteroskedasticity or multicolinearity. Both Breusch-Pagan and White's tests' results suggested that we fail to reject the null hypothesis of homoskedastic errors. Furthermore, average VIF scores were lesser than 10.

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REFERENCES

Alderson, K. G. (2003). The ecological model of gay male identity. *The Canadian Journal of Human Sexuality*, *12*(6), 75−86.

Alexander, J. (2002). Queer webs: Representations of LGBT people and communities on the world wide web (introduction to the special issue). *International Journal of Sexuality and Gender Studies*, *7*(2/3), 77−84.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173−1182.

Bohan, J. S., Russell, G. M., & Montgomery, S. (2002). Gay youth and gay adults: Bridging the generation gap. *Journal of Homosexuality*, *44*(1), 15−41.

Branscombe, N. R., Schmitt, M. T., & Harvey, R. (1999). Perceiving pervasive discrimination among African Americans: Implications for group identification and well-being. *Journal of Personality and Social Psychology*, *77*, 135−149.

Buhrmester, D. (1996). Need fulfillment, interpersonal competence, and the developmental contexts of early adolescent friendship. In W. M. Bukowski, A. F. Newcomb, & W. W. Hartup (Eds.), *The company they keep: Friendship in childhood and adolescence* (pp. 158−185). Cambridge, England: Cambridge University Press.

Burke, M., Kraut, R., & Marlow, C. (2011). Social capital on facebook. In *Proceedings of the 2011 annual conference on Human factors in computing systems − CHI'11*. New York, NY: ACM Press.

Burke, M., Marlow, C., & Lento, T. (2010). Social network activity and social well-being. In *Proceedings of the 28th international conference on Human factors in computing systems − CHI'10*. New York, NY: ACM Press.

Burt, R. S. (1992). *Structural holes: The social structure of competition*. Cambridge, MA: Harvard University Press.

Central Bureau of Statistics. (2002). *Family income survey*. Jerusalem, Israel: Israeli Bureau of Statistics.

Central Bureau of Statistics. (2010). *Social survey: Health, life style, and computer and Internet use*. Jerusalem, Israel: Israeli Bureau of Statistics.

Curwen, T. (2010). Gay teen endured a daily gantlet. *Los Angeles Times*, October 8.

Drushel, B. E. (2010). Virtually supportive: Self-disclosure of minority sexualities through online social networking sites. In C. Pullen & M. Cooper (Eds.), *LGBT identity and online new media* (pp. 62−72). New York, NY: Routledge.

Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook "friends:" Social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication*, *12*(4), 1143−1168. Retrieved from http://jcmc.indiana.edu/vol12/issue4/ellison.html. Accessed on December 29, 2010.

Fleming, J. S., & Courtney, B. E. (1984). The dimensionality of self-esteem II: Hierarchical facet model for revised measurement scales. *Journal of Personality and Social Psychology*, *46*, 404−421.

Frank, D., & Mceneaney, E. (1999). The individualization of society and the liberalization of state policies on same-sex sexual relations, 1984−1995. *Social Forces*, *77*(3), 911−943.

Friedman, S. L. (2006). Watching twin bracelets in China: The role of spectatorship and identification in an ethnographic analysis of film reception. *Cultural Anthropology*, *21*(4), 603−632.

Granovetter, M. S. (1973). The strength of weak ties. *American Journal of Sociology*, *78*(6), 1360−1380.

Gray, M. L. (2009). *Out in the county: Youth, media, and queer visibility in rural America*. New York, NY: New York University Press.

Gross, A. M. (2001). Challenges to compulsory heterosexuality: Recognition and non-recognition of same-sex couples in Israeli law. In R. Wintemute & M. Andenaes (Eds.), *Legal recognition of same-sex partnerships: A study of national, European and international law* (pp. 391−414). Oxford, UK: Hart.

Hardey, M. (2004). Mediated relationships. *Information, Communication & Society*, *7*(2), 207−222.

Helsen, M., Vollebergh, W., & Meeus, W. (2000). Social support from parents and friends and emotional problems in adolescence. *Journal of Youth and Adolescence*, *29*(3), 319−335.

Kama, A. (2000). From terra incognita to terra firma: The logbook of the voyage of gay men's community into the Israeli public sphere. *Journal of Homosexuality*, *38*(4), 133−162.

Karl, I. (2007). On-/offline: Gender, sexuality, and the techno-politics of everyday life. In K. O'Riordan & D. J. Phillips (Eds.), *Queer online: Media, technology, and sexuality* (pp. 45−66). New York, NY: Peter Lang Publishing.

Laukkanen, M. (2007). Young queers online: The limits and possibilities of non-heterosexually self-representation in online conversations. In K. O'Riordan & D. J. Phillips (Eds.), *Queer online: Media, technology, and sexuality* (pp. 81−100). New York, NY: Peter Lang Publishing.

Lin, N. (2001). *Social capital: A theory of social structure and action*. New York, NY: Cambridge University Press.

Marciano, A. (2009). The role of virtual forum in gay adolescents' coping with processes of coming out of the closet. *Media Frames: Israeli Journal of Communication*, *4*, 1−28 (In Hebrew).

Marsden, P. V., & Campbell, K. E. (1984). Measuring tie strength. *Social Forces*, *63*(2), 482−501.

Mesch, G. S. (2001). Social relationships and Internet use among adolescents in Israel. *Social Science Quarterly*, *82*(2), 329−340.

Mesch, G. S. (2003). The family and the Internet: The Israeli case. *Social Science Quarterly*, *84*(4), 1038−1050.

Mesch, G. S. (2009). Parental mediation, online activities and cyberbullying. *Cyber Psychology and Behavior*, *12*(4), 387−393.

Mesch, G. S., & Talmud, I. (2006). Online friendship formation, communication channels, and social closeness. *International Journal of Internet Sciences*, *1*(1), 29−44.

Mesch, G. S., & Talmud, I. (2007). Similarity and the quality of online and offline social relationships among adolescents in Israel. *Journal of Research in Adolescence*, *17*(2), 455−466.

Mesch, G. S., & Talmud, I. (2010a). *Wired youth: The social world of adolescence in the Information age*. London: Routledge.

Mesch, G. S., & Talmud, I. (2010b). Internet connectivity, community participation, and place attachment: A longitudinal study. *American Behavioral Scientist*, *53*, 1095−1110.

Meyer, I. H. (1995). Minority stress and mental health in gay men. *Journal of Health and Social Behavior*, *36*, 38−56.

Meyer, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. *Psychology of Sexual Orientation and Gender Diversity*, *1*, 3−26.

Miller, C. T., & Major, B. (2000). Coping with stigma and prejudice. In T. F. Heatherton, R. E. Kleck, M. R. Hebl, & J. G. Hull (Eds.), *The social psychology of stigma* (pp. 243−272). New York, NY: Guilford Press.

Mittell, J. A. (2001). A cultural approach to television genre theory. *Cinema Journal*, *40*, 3−24.

O'Riordan, K., & Phillips, D. J. (Eds.). (2007). *Queer online: Media, technology, and sexuality*. New York, NY: Peter Lang Publishing.

Pizmony-Levy, O., Kama, A., Shilo, G., & Lavee, S. (2008). Do my teachers care I'm gay? Israeli lesbigay school students' experiences at their schools. *Journal of LGBT Youth*, *5*(2), 33−61.

Pizmony-Levy, O., Kama, A., Shilo, G., Lavee, S., & Pinhassi, B. (2004). *National School Climate Survey: School related experiences of Israeli lesbian, gay, bisexual and transgender youth*. Tel Aviv, Israel: Israeli Gay Youth Organization (In Hebrew).

Pizmony-Levy, O., Shilo, G., & Pinhasi, B. (2009). Is there a new Israeli gay teenager? *Journal of LGBT Youth*, *6*, 340−368.

Pullen, C. (2010). The murder of Lawrence king and LGBT online stimulations of narrative copresence. In C. Pullen & M. Cooper (Eds.), *LGBT identity and online new media* (pp. 17−36). New York, NY: Routledge.

Pullen, C., & Cooper, M. (Eds.). (2010). *LGBT identity and online new media*. New York, NY: Routledge.

Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. New York, NY: Simon & Schuster.

Rosenberg, M. (1989). *Society and the adolescent self-image* (Rev. ed.). Middletown, CT: Wesleyan University Press.

Shaw, D. F. (1997). Gay men and computer communication: A discourse of sex and identity in cyberspace. In S. G. Jones (Ed.), *Virtual culture: Identity and communication in cyberspace* (pp. 133−145). London: Sage.

Shilo, G. (2007). *Pink life: Gay, lesbian, bisexual and transgender youth*. Tel Aviv, Israel: Resling (In Hebrew).

Shilo, G., Pizmony-Levy, O., Kama, A., Lavee, S., & Pinhassi, B. (2006). *Pride in uniform: Army related experiences of Israeli lesbian, gay, bisexual and transgender soldiers*. Tel Aviv, Israel: Israeli Gay Youth Organization (In Hebrew).

Smith, M. A., Drucker, S. M., Kraut, R., & Wellman, B. (1999). Counting on community in cyberspace. In *CHI '99 extended abstracts on human factors in computing systems − CHI '99*. New York, NY: ACM Press.

Stern, L. A., & Taylor, K. (2007). Social networking on facebook. *Journal of the Communication, Speech & Theatre Association of North Dakota*, *20*, 9−20.

Talmud, I., & Mesch, G. S. (1997). Market organization and corporate instability: The ecology of inter-industrial networks. *Social Science Research*, *26*, 419−441.

Tarrow, S. (1998). Fishnets, Internets and Catnets: Globalization and transnational collective action. In M. Hanagan, L. Moch, & W. Te Brake (Eds.), *Challenging authority: The historical study of contentious politics* (pp. 228−244). Minneapolis, MN: University of Minnesota Press.

Turow, J., & Ribak, R. (2002). Toward a world-system perspective on cross national Web research. In R. Mansell, R. Samrajiva, & A. Mahan (Eds.), *Networking knowledge for information societies: Institutions and intervention*. Delft, Netherlands: University of Delft Press.

Uzzi, B. (1997). Social structure and competition in interfirm networks: The paradox of embeddedness. *Administrative Science Quarterly*, *42*(1), 35−67.

Weishut, D. J. N. (2000). Attitudes toward homosexuality: An overview study. *Israel Journal of Psychiatry and Related Sciences*, *37*, 308−319.

Wellman, B. (1999). The network community: An introduction. In B. Wellman (Ed.), *Networks in the global village: Life in contemporary communities* (pp. 1−48). Boulder, CO: Westview Press.

Wellman, B., Haase, A. Q., Witte, J., & Hampton, K. (2001). Does the Internet increase, decrease, or supplement social capital? Social networks, participation, and community commitment. *American Behavioral Scientist*, *45*(3), 436−455.

Williams, D. (2006). On and off the 'Net: Scales for social capital in an online era. *Journal of Computer-Mediated Communication*, *11*(2), 593−628. Retrieved from http://jcmc.indiana.edu/vol11/issue2/williams.html. Accessed on December 29, 2010.

Wolak, J., Mitchell, K. J., & Finkelhor, D. (2003). Escaping or connecting? Characteristics of youth who form close online relationships. *Journal of Adolescence*, *26*, 105−119.