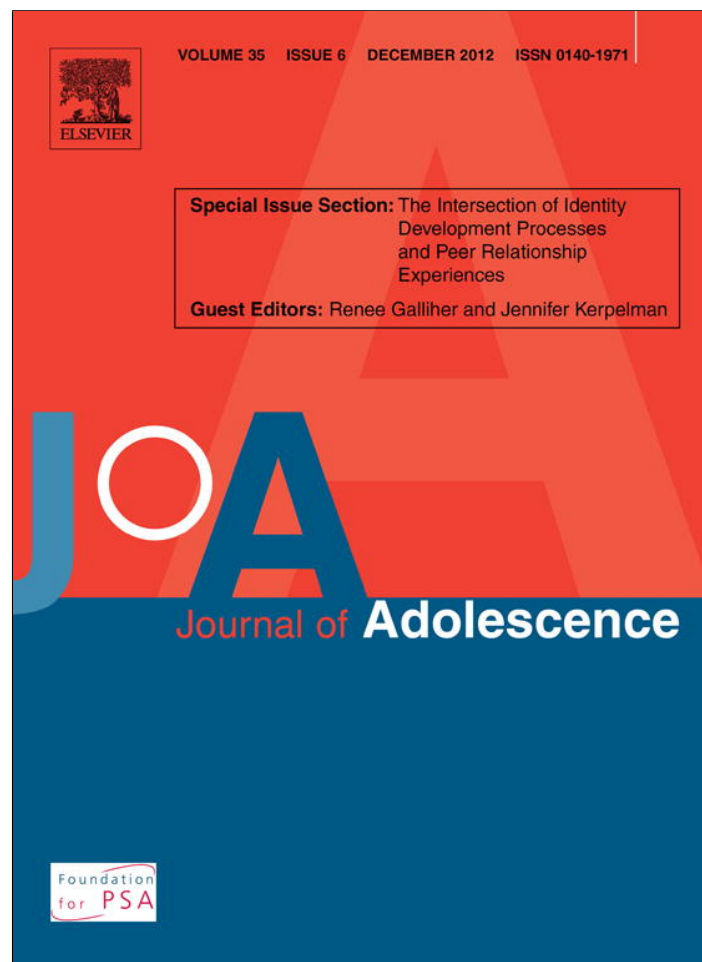


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## Friendship 2.0: Adolescents' experiences of belonging and self-disclosure online

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### A B S T R A C T

**Keywords:**Adolescence  
Identity  
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Internet

This study explores the role that digital media technologies play in adolescents' experiences of friendship and identity. The author draws on findings from in-depth interviews with 32 adolescents (15 girls, 17 boys) ages 13–18 ( $M = 15.5$  years) attending one of seven secondary schools in Bermuda. The adolescents were asked to describe the nature of their online exchanges with friends and the value they ascribe to these conversations. A thematic analysis of their responses revealed that online peer communications promote adolescents' sense of belonging and self-disclosure, two important peer processes that support identity development during adolescence. At the same time, the unique features of computer-mediated communication shape adolescents' experiences of these processes in distinct ways. Gender and age differences show that adolescents' online peer communications are not uniform; the characteristics that distinguish adolescents offline also shape their online activities.

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### Introduction

In recent years, digital media have assumed a prominent role in adolescents' lives and provided them with new contexts to undertake key developmental tasks. Nearly three-quarters (73%) of U.S. adolescents with internet access use social network sites (Purcell, 2011), and 75% of all adolescents in the United States own a cell phone (Lenhart, Ling, Campbell, & Purcell, 2010). For most adolescents, their digital media use is driven by a desire to communicate with existing friends (boyd, 2007; Ito et al., 2009). In fact, a 2009 survey conducted by the Pew Internet & American Life Project suggests that text messaging has become the dominant form of adolescent peer communication (Lenhart et al., 2010). When asked what method they use regularly to contact their friends outside of school, 54% of U.S. teens reported using text messaging, compared to 38% who said they talk on their cell phone and 30% who talk on a landline telephone. Remarkably, text messaging is even more popular than face-to-face communication. Just 33% of teens reported engaging in daily face-to-face interactions with friends outside of school. Social networking and instant messaging are also among adolescents' favored forms of regular communication, with 25% and 24%, respectively, reporting daily communication with friends via these platforms.

Scholars have begun to explore how these new patterns of communication may be shaping adolescent development in new ways (Subrahmanyam & Smahel, 2011). I contribute to this emerging body of literature by drawing on findings from in-depth interviews with 32 adolescents (13–18 years) to investigate the role that specific forms of online communication play in adolescents' experiences of friendship and identity. I also examine age and gender differences in participants' patterns of online communication and the meaning they ascribe to them.

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## Theoretical context

### *Peers' contribution to adolescent identity development*

Questions of identity—the sense of who one is and in what one believes—loom large for adolescents in Western societies. It is during this stage of development that individuals contemplate for the first time such questions as “Who am I? How do I fit into the world around me?” Their answers to these questions are important, since a positive sense of identity has been linked to psychological well-being (e.g., Berzonsky, 2003a, 2003b; Luyckx, Schwartz, Goossens, Soenens, & Beyers, 2008; Marcia, 1993; Meeus, 1996; Meeus, Iedema, Helsen, & Vollebergh, 1999; Waterman, 1992). Indeed, Erikson (1968, 1980) contended that the formation of an identity that is both personally meaningful and validated by others constitutes the primary developmental task of adolescence.

Peer relationships and the social contexts in which they are experienced become central to the identity formation process during adolescence (Brechwald & Prinstein, 2011; Brown, 1990; Pugh & Hart, 1999; Savin-Williams & Berndt, 1990; Youniss & Smollar, 1985). Prior to adolescence, parents serve as primary sources of identification (Erikson, 1968). Though parents continue to serve as models of identity during adolescence, peers assume a new importance as adolescents begin to spend more time interacting with their friends than they do with their parents (Bukowski & Sippola, 2001; Rubin, Bukowski, & Parker, 2006). These interactions occur within dyadic relationships and larger peer groups, and may include engaging in shared activities, exchanging jokes, and talking about daily events (Savin-Williams & Berndt, 1990). Boys and younger adolescents tend to organize their relationships more around shared activities, while girls and older adolescents tend to spend more time in conversation with one another (Buhrmester & Furman, 1987).

During the course of their peer interactions, adolescents develop and reinforce shared norms, such as distinct language use, clothing styles, and music preferences (Arnett, 1996; Brake, 1985). They use these norms as identity markers to define themselves in relation to their peers and as distinct beings from their parents. In the process, they experience a sense of belonging with those who share their interests and values (Brechwald & Prinstein, 2011). This sense of belonging plays an important role in validating adolescents' developing sense of identity (Brechwald & Prinstein, 2011; Savin-Williams & Berndt, 1990). In early adolescence, individuals tend to identify with one core peer group, or clique (Brown, 1990). As adolescents grow older, they begin to participate in and identify with multiple peer groups whose boundaries are increasingly fluid (Rubin et al., 2006). This loosening of peer bonds coincides with a growing sense of autonomy (Kroger, 2007).

Another way peers contribute to the identity development process is by providing adolescents with opportunities to engage in intimate self-disclosure (Buhrmester & Prager, 1995). Through intimate self-disclosure in the context of lengthy conversations, friends listen to, encourage, and give each other advice (Rubin et al., 2006; Youniss & Smollar, 1985). This identity-supporting peer process distinguishes childhood and adolescent friendships. In childhood, friendships are defined instrumentally by shared activities and interests (Rubin et al., 2006). As adolescents' perspective-taking abilities improve, their friendships are increasingly defined by mutuality, empathy, and reciprocity (Selman, 1981). These qualities help to create intimacy between friends. Within the context of their intimate peer relationships, adolescents articulate their sense of themselves and provide each other with feedback on and validation of these articulations. In the process, they learn what they share with others as well as what makes them unique (Sullivan, 1953; Youniss, 1980).

Intimacy through self-disclosure is particularly characteristic of female adolescent friendships (Berndt, 1996; Brown & Larson, 2009; Collins & Steinberg, 2006; Furman & Buhrmester, 1985; Youniss, 1980; Youniss & Smollar, 1985). Boys do engage in self-disclosure with their friends, though to a lesser extent and beginning later in adolescence than girls (Buhrmester & Prager, 1995). For both genders, self-disclosure and intimacy increase with age, though the intensity and exclusivity of their intimate friendships tend to decrease during the course of adolescence (Brown & Larson, 2009; Buhrmester & Prager, 1995).

### *New contexts for adolescent development*

Digital media have become central to the way adolescents experience their peer relationships. Friends use cell phones, social network sites, and instant messaging platforms to “hang out” with each other round-the-clock (Ito et al., 2009; Subrahmanyam & Šmahel, 2011). Text messaging is a particularly effective way for adolescents to maintain a constant connection to their friends regardless of where they are or what they are doing. These messages are typically “lightweight” in nature, serving primarily to create a sense of “co-presence” between friends (Ito & Okabe, 2005). With respect to social network use, boyd (2007) found that adolescents use sites like Facebook and MySpace to hang out in a more public way, by posting pictures of themselves with their friends, leaving messages on each other's pages, and listing their closest friends on their profiles. Furthermore, groups of friends often adopt a similar tone and style on their respective profiles. Similarly, in her study of 40 teen blogs, Bortree (2005) observed that teens used their blogs to communicate with offline friends and to document activities they had shared with these friends. Like boyd, Bortree found that friends tended to influence the content of each other's blogs, for instance by adopting similar terms and posting the same internet quizzes. In this way, online hanging out, like its offline counterpart, allows adolescents to solidify their peer group membership and define themselves in relation to their peers (Livingstone, 2008). Empirical evidence suggests that adolescents' online peer communications have a positive effect on the quality of their friendships (Subrahmanyam & Šmahel, 2011; Valkenburg & Peter, 2009, 2011).

In addition to hanging out online, many adolescents also use digital media technologies to engage in self-disclosure with their close friends (Davis, 2010; Stern, 2007; Subrahmanyam & Šmahel, 2011; Valkenburg & Peter, 2011). In their longitudinal study of adolescents' instant messaging practices, Valkenburg and Peter (2009) found that instant messaging stimulated adolescents' intimate self-disclosure to their friends. Online self-disclosure is particularly common among girls, older adolescents, and socially anxious or lonely adolescents (Bonnetti, Campbell, & Gilmore, 2010; Schouten, Valkenburg, & Peter, 2007; Valkenburg & Peter, 2011). However, in one study, researchers found a curvilinear relationship between age and perceived value of the internet for intimate self-disclosure (Valkenburg & Peter, 2007). Fifteen year-olds were more likely than any other age group (spanning 10–16 years) to endorse the view that online communication is more effective than offline communication in self-disclosing intimate information.

In their investigation of adolescents' self-disclosure via instant messaging, Schouten et al. (2007) found that controllability and reduced nonverbal cues promoted self-disclosure. Adolescents were more likely to engage in online self-disclosure if they believed that instant messaging gave them greater control over how and what they communicated about themselves. They were also more likely to self-disclose if reduced visual, auditory, and social context cues were important to them. This finding is consistent with Walther's (1996) hyperpersonal communication theory, in which specific features of computer-mediated communication, such as audiovisual anonymity and asynchrony, encourage people to self-disclose more than they would through face-to-face communication.

### *The present study*

In the present study, I investigate adolescents' use of digital media to engage in "lightweight," or casual, conversations with their friends, as well as more intimate communications involving self-disclosure of personal feelings. Specifically, I examine how these forms of online peer communication shape adolescents' experience of two identity-supporting peer processes: sense of belonging and self-disclosure. Existing scholarship shows that digital media have begun to play an important role in both processes, but our understanding of this role remains limited. This area of research is as new as the technologies themselves, and scholars must reconsider earlier findings as newer technologies emerge and adolescents' media practices change (Subrahmanyam & Šmahel, 2011). Moreover, much of the work on adolescents' digital media use fails to distinguish between early, middle, and late adolescence (though see Davis, 2010; Livingstone, 2008; Valkenburg et al., 2011), thereby limiting insight into the connections between digital media and adolescent development (Subrahmanyam & Šmahel, 2011).

In the present investigation, I draw on in-depth interviews with 32 adolescents between the ages of 13 and 18 years to provide insight into the developmental underpinnings of adolescents' digital media use. In keeping with the goals of qualitative research, I have not formulated specific hypotheses so as not to impose researcher expectations on participants' experiences. Instead, I have framed the following research questions broadly in order to capture the meaning that participants ascribe to their digital media activities.

*Research Question 1:* How do adolescents of different ages and genders describe their use of various digital media technologies?

*Research Question 2:* What insights do their descriptions provide about the role of digital media in adolescents' identity-related peer processes?

## **Method**

### *Sample*

The present study is part of a larger research project involving survey responses collected during March and April 2010 from 2079 students (1190 girls, 895 boys<sup>1</sup>) ages 11–19 ( $M = 15.4$  years) attending one of seven secondary schools on the island of Bermuda. With approximately 2,600 students attending senior school in Bermuda, overall, the survey sample contained roughly 80% of all senior school students on the Island. Located approximately 650 miles east of Cape Hatteras, North Carolina, Bermuda is a British dependent territory that the World Bank ranks among the world's most affluent countries. Bermuda's small population, island status, and strict immigration rules have engendered a unique sense of community and national identity. At the same time, Bermudian heritage draws from many cultural influences, including traditions from England, Canada, and the Caribbean. Notably, due to the Island's geographic proximity to the United States, most of its television and radio feeds are American. Thus, Bermudians—including Bermudian youth—are exposed on a daily basis to the same sources of information and popular culture as most Americans. In addition, American and Bermudian youth engage in similar digital media activities, including text messaging, social networking, and instant messaging. It should be noted, however, that a higher proportion of Bermudian adolescents engage in these activities than American adolescents. Whereas 73% of U.S. adolescents with internet access use social network sites (Purcell, 2011), 90% of the Bermudian survey respondents use them (Table 1). Cell phone ownership is also higher among Bermudian adolescents: 75% of U.S. adolescents (Lenhart et al., 2010)

<sup>1</sup> Four students did not provide their gender.

**Table 1**

Inventory of participants' digital media use.

Type of digital media used	Survey (n = 2079) <sup>a</sup>		Interview (n = 32)	
	n	%	n	%
Own cell phone	1808	94%	30	94%
Own Internet-enabled cell phone	–	–	17	53%
Maintain Facebook profile	1818	90%	29	91%
Former profile on MySpace and/or Hi-5	–	–	8	25%
Instant messaging (e.g. MSN, AIM, Skype)	1751	87%	25	78%
Twitter	–	–	3	9%
Email	1634	82%	30	94%
<i>Games</i>				
Play games on game console	1044	59%	25	78%
Play single-player online/cell phone games	879	50%	16	50%
Play multiplayer online games/virtual worlds	526	30%	5	16%
Online shopping	897	56%	13	41%
YouTube	1924	96%	30	94%
Surf the Internet for funny websites	–	–	20	63%
Visit entertainment/sports websites	–	–	19	59%
Visit information websites	–	–	15	47%
Look up information on Wikipedia	–	–	24	75%
Own laptop computer	1603	83%	–	–
Own portable media player (e.g. iPod)	1665	86%	24	75%

<sup>a</sup> Missing values not included in calculation of survey percentages.

compared to 94% of the survey respondents in this study. Due to these high rates of digital media use and Bermuda's unique cultural and socioeconomic characteristics, it is not possible to generalize the results of this study to the United States, Great Britain, or other countries.

In consultation with teachers and administrators from each of the seven sampled schools, I identified and invited 32 students from the larger survey sample to participate in face-to-face interviews, which took place between April and June 2010. In selecting students, teachers and administrators were asked to consider students' demographic characteristics, their knowledge of students' digital media use, and their perception of which students would feel comfortable and express themselves well in an interview setting. Due to this last consideration, it is likely that the interview sample comprised students who were somewhat more confident and well-spoken than the majority of their peers. Every student had taken the online survey previously and had indicated on a post-survey form their willingness to participate in an interview. I obtained parental consent for all participants under the age of 18 years. Each student was compensated for his or her time with a \$25 gift certificate.

The 32 participants range in age from 13 to 18 years ( $M = 15.5$  years), and represent grades 8 through 12. The sample includes six early adolescents (13–14 years), 17 middle adolescents (15–16 years), and nine late adolescents (17–18 years). Twenty-one participants (66%) identified themselves as Black, ten participants (31%) identified as White, and one participant (3%) identified herself as Other (following the racial categories of the Bermuda Government). I used mother's highest education level as a measure of socioeconomic status and found that 13 participants (41%) had mothers who had either finished college or attended school beyond college; nine participants (28%) had mothers who had some college experience; seven participants (22%) had mothers who had finished high school; and two participants (6%) had mothers who had not completed high school. One subject was unsure of her mother's education level.

Table 2 reveals that the demographic characteristics of the survey and interview samples are fairly well-aligned, with the exception of the over-representation in the interview sample of students attending private school. This discrepancy can be explained by the fact that I chose to interview approximately the same number of students from each school in order to avoid placing a larger administrative burden on one school compared to another. The private schools are over-represented in the interview sample due to the fact that my study includes two large public high schools and five smaller private high schools. Notably, however, Table 1 shows that the digital media use of interview participants and survey respondents is comparable. Still, the school imbalance limits the generalizability of the findings reported here.

#### Data collection

Following other recent studies involving youth's digital activities (e.g., [boyd, 2007, 2008](#); [Hodkinson, 2007](#); [Livingstone, 2008](#); [Stern, 2007](#)), I conducted one-on-one, semi-structured interviews with each of the 32 students in my sample. Using an interview approach gave participants the opportunity to describe what their digital media use means to them and how it fits into other aspects of their lives. The interviews lasted approximately 1 h and were conducted in a quiet room at the participant's school.

Because the present study is part of a broader investigation into the relationships among adolescents' digital media use, peer and parent relationships, and sense of identity, the interview protocol covered a broad set of questions that were tied to the questions from the survey portion of the study. Questions relevant to the present study pertain to participants' online peer

**Table 2**  
Demographic characteristics of participants.

Characteristic	Survey (n = 2079)		Interview (n = 32)	
	n	%	n	%
<i>Gender</i>				
Girls	1180	57%	15	47%
Boys	895	43%	17	53%
No answer	4	.002%	–	–
<i>Race</i>				
Black	1078	52%	21	66%
White	467	22%	10	31%
Other	323	16%	1	3%
No answer	211	10%	–	–
<i>School type</i>				
Public	1001	48%	8	25%
Private	1078	52%	24	75%
<i>School year</i>				
Grade 8 (Year 9)	252	12%	4	13%
Grade 9 (Year 10)	579	28%	8	25%
Grade 10 (Year 11)	470	23%	7	22%
Grade 11 (IB1)	397	19%	7	22%
Grade 12 (IB2)	381	18%	6	19%
<i>Mother's highest education level</i>				
Some high school	99	5%	2	6%
Finished high school	468	23%	7	22%
Some college	228	11%	9	28%
Finished college	586	28%	8	25%
School beyond college	218	10%	5	16%
Don't know	250	12%	1	3%
No mother	9	.4%	–	–
No answer	221	11%	–	–
<i>Father's highest education level</i>				
Some high school	173	8%	3	9%
Finished high school	463	22%	8	25%
Some college	175	8%	6	19%
Finished college	437	21%	7	22%
School beyond college	211	10%	3	9%
Don't know	348	17%	4	13%
No father	48	2%	1	3%
No answer	224	11%	–	–

communications, including their motivations for using various media to communicate with their friends (e.g. “What do you like about using [Facebook, cell phone, etc.] to talk with people?”); the topics they discuss with friends via different platforms (e.g. “Do you find that you talk about different things with people depending on what you're using to communicate with them?”); and the similarities and differences they perceive between online and offline communication (e.g. “Are there things that are easier to say online vs. talking in person? Are there things that you don't talk about online?”). The most popular communication platforms used by participants included text messaging, Facebook, and instant messaging platforms such as MSN, AOL, and Skype.

#### Data analysis

The interviews were audio-recorded and transcribed verbatim. Using thematic analysis (Boyatzis, 1998), I developed a coding scheme that drew on the literature relating to adolescents' digital media use. Specifically, the two codes that are the focus of the present investigation represent two different views of the quality of adolescents' online peer communications. The first of these codes pertains to the casual or “lightweight” online exchanges discussed in this paper's literature review (boyd, 2007; Ito & Okabe, 2005; Ito et al., 2009). Casual exchanges include instrumental communications, such as making plans to meet up with friends or discussing homework, as well as less goal-directed communications, such as sharing jokes, commenting on pictures posted to Facebook, or checking in to see how a friend is doing. For example, when asked about the nature of his text-based cell phone conversations with friends, 15 year-old Eric responded, “Let's see, I am not one for serious conversation, so I will just have a casual conversation with somebody, but also I can make plans and stuff. I make plans a lot.” The second code consists of intimate online exchanges and reflects previous research indicating that intimate self-disclosure is facilitated by digitally mediated communication (Davis, 2010; Subrahmanyam & Šmahel, 2011; Valkenburg & Peter, 2011; Walther, 1996). For instance, the following statement, made by 15 year-old Monique, was coded as an intimate online exchange: “If I am having a really big problem, I'll probably BB [Blackberry Messenger] to my friend instead of saying it to her face... Sometimes it is just easier to type it.”

To determine interrater reliability, I enlisted a research assistant with experience in thematic analysis. We independently coded one transcript, after which we met to discuss areas of alignment and misalignment until we reached consensus for each observation. I clarified the definition of each code, and we independently coded three additional transcripts. I calculated kappa statistics for each code that was applied to this group of transcripts. We met again to discuss codes for which the kappa statistic fell below .70 and then coded a second group of four transcripts. This process was repeated a third time until the kappa statistic for each code was above .70 (see Table 3 for a complete overview of the reliability statistics). Following guidelines laid out by Landis and Koch (1977), I determined that the casual exchanges code reached an “almost perfect” level of agreement ( $\kappa = .81$ – $1.00$ ), and the intimate exchanges code reached a “substantial” level of agreement ( $\kappa = .61$ – $.80$ ). The ten transcripts used to establish interrater reliability represent 31% of the sample. Once satisfactory reliability was achieved, I coded the remaining transcripts independently.

## Results

Consistent with previous scholarship on youth’s digital media use, participants most frequently cited the ability to communicate with friends as their primary motivation for using digital media technologies. These communications included both casual exchanges and more intimate conversations involving self-disclosure of personal feelings. Documented here are participants’ descriptions of these online peer communications and the personal value they attach to each one.

### *Finding connection and belonging through casual online exchanges*

Across the entire sample, participants referenced casual online exchanges ( $n = 138$ ) more than three times as often as intimate exchanges ( $n = 42$ ). In fact, nine participants—seven of them boys—discussed casual exchanges exclusively during the course of their interview. According to participants, these exchanges occur through public channels, such as wall-to-wall communications on Facebook, and through more private platforms, such as cell phones (particularly text messaging) and instant messaging services like MSN, AOL, and Skype. They include instrumental conversations, such as discussions about homework and making plans to meet in person, as well as less goal-oriented conversations, such as exchanging jokes and sharing events from one’s day.

Participants reported using cell phones most frequently to engage in instrumental conversations. Forty-seven percent of all references to instrumental conversations involved cell phones; 38% involved Facebook; and 15% involved instant messaging services like MSN, AOL, and Skype. With respect to the specific topics of instrumental conversations, early adolescents (13–14 years) discussed homework more frequently than older adolescents; 22% percent of early adolescents’ (13–14 years) references to casual online exchanges involved homework discussions, compared to 12% of the references made by middle adolescents (15–16 years) and only 7% of the references made by late adolescents (17–18 years). Boys discussed making offline plans with their friends more frequently than girls; 33% of boys’ references to casual online exchanges involved making plans to meet with friends offline, compared to 23% of the references made by girls.

The less goal-oriented exchanges are used to maintain a sense of connection when friends are physically separated. Facebook accounted for 68% of these general check-ins; cell phones (primarily text messaging) accounted for 22%; and instant messaging accounted for the remaining 10%. Connor, age 13, said that he and his group of six close friends like to use text messaging to talk about sports or “just funny things we are seeing happen.” When asked what he and his friends text each other about, 14 year-old Aaron explained, “Just like, ‘How was school? How’s life? What you been up to?’ because I think texting is like an easy way to keep in contact.” Aaron noted that such conversations sometimes last throughout an entire day. There may be breaks between text messages while one or both friends go to class or eat dinner, but eventually they return to their cell phone screens to resume their conversation. Carmen, age 15, said she likes texting for this reason, because it allows her to do other things, like homework, while maintaining a connection to her friends. For other participants, like Ashley and Jenni, texting is a way to fill time when there is nothing else to do. Ashley, age 17, reflected, “It’s just an instant conversation if

**Table 3**  
Reliability statistics, by code.

	Casual exchanges	Intimate exchanges
Kappa - Round 1 <sup>a</sup>	.52	.78
% agreement - Round 1	94.5%	98.5%
% occurrence - Round 1	5.2%	3.0%
Kappa - Round 2 <sup>b</sup>	.59	–
% agreement - Round 2	95.0%	–
% occurrence Round 2	8.3%	–
Kappa - Round 3 <sup>c</sup>	.85	–
% agreement - Round 3	96.9%	–
% occurrence Round 3	11.9%	–

<sup>a</sup> Round 1 coding included three transcripts.

<sup>b</sup> Round 2 coding included four transcripts.

<sup>c</sup> Round 3 coding included two transcripts.

you're bored, I guess." Similarly, Jenni, also 17, remarked, "[Texting] is kind of just like touching base, and just kind of like when I am bored, and I am like, hmm, what can I do? Meghan is always around. I will talk to her." Eric, age 15, believes this round-the-clock connection has brought him closer to his friends, "I guess I have more time to learn about them, and what they like to do, and stuff...I can text them anytime, like for longer periods of time than I can hang out with them."

For some participants, the ability to reach out and connect with friends anywhere and anytime is not just a convenience, it is a necessity. When asked what his friendship would be like without access to digital media, 15 year-old Kyle said he would be less close to his friends, "...because they are communicating to other people and then they are going to be with other people [instead of me]...But, if I am up-to-date with everybody, then everybody could communicate with me." Without his cell phone, Facebook, or instant messaging services, Kyle worries that he might become isolated from his friends and left out of their shared activities.

Of the casual exchanges that take place on Facebook, participants reported that fully 85% occur on public pages. As such, they serve not only to connect friends to each other but also to signal peer group affiliation to others. Consider the practice of posting and commenting on pictures that 15 participants (47%) discussed. These adolescents explained that the pictures they post typically depict themselves engaging in a fun activity with one or more friends. Facebook's commenting feature allows those involved to reflect together—and in front of their broader group of Facebook friends—on their shared experiences. Even when one or more friends do not appear in a picture together, the tagging feature allows adolescents to connect their friends publicly to the pictures they post. Janelle, age 17, explained, "Somebody might put like a picture of a heart and tag like everybody on their...friend list...just to let you know, like 'You're my friend and I love you,' or something." Similarly, 13 year-old Melissa remarked, "Sometimes [my friends] take a picture of themselves, and picnic it, and change it around, and put like stuff like 'I love you' and stuff on it, and tag me in the pictures." Though boys were just as likely as girls to talk about posting and commenting on pictures, affectionate comments such as "I love you" were said exclusively by girls.

Sharing cultural artifacts represents another way that adolescents signal peer group affiliation. For instance, Jenni, age 17, described a typical exchange on the public pages of Facebook in the following way:

If my friends and I watch one of those funny YouTube videos, and we are all like dying, cracking up laughing, then we all have like some sort of innuendo about it in our statuses, and then all the people who watched it go up there, and you like it and you comment on it, and everybody else is like, 'What's going on?'

Jenni and her friends use coded language to refer to a cultural artifact that they have experienced together and decided as a group that they enjoy. Notably, only a small fraction of Jenni's roughly 400 Facebook friends will understand the humor of their comments and be able to participate in the joke. In this way, the exchange serves as a boundary that defines who is and is not part of Jenni's primary friendship group.

While Jenni uses public Facebook exchanges to define the boundaries of her friendship group, it is interesting to consider the possibility that online environments may provide unique opportunities for these boundaries to expand. In describing why Facebook is her favorite communication platform, Jenni said:

Facebook is the one that is the most interactive with like everybody. Cell phones, like texting is like with your close friends, like I wouldn't text a random girl in my class, you know, but if she has like a funny video on Facebook, then I would watch it, and be like, 'Hey, this is really great.'

For Jenni, Facebook seems to create a unique space for her to communicate with a peer who is not part of her regular friendship group. Without such a platform, Jenni may not have known that she and the "random girl" in her class share the same taste in funny videos. Though they may not become close friends, it is at least possible that this brief exchange could lead to more extended interaction in the future. Indeed, this was the case for 14 year-old Ellie: "I had a friend who I had only met once [offline], but then I talked to her on Facebook a lot, and now we are friends." Jenni and Ellie numbered among the 87% of Facebook users (26 out of 30) who said that they sometimes or frequently interact with friends outside their primary friendship group, such as friends they met at camp, in after-school activities, or friends from different schools. Notably, all participants described these interactions in positive terms.

#### *Self-disclosure through intimate online exchanges*

Intimate online exchanges involve personal self-disclosure between friends. Not surprisingly, participants reported that these communications occur through private channels, such as instant messaging, cell phones, and the private messaging features on Facebook. Though less frequently referenced in the interviews than casual communications, intimate exchanges were nevertheless discussed by 22 participants (69%) in this sample. Five of these participants—all girls—discussed intimate exchanges more frequently than casual exchanges. Indeed, girls were more likely than boys to say they engage in intimate online exchanges (13 girls, 9 boys). With respect to age differences, younger adolescents were more likely to say they engage in intimate online conversations than older adolescents; 83% of 13–14 year-olds spoke about intimate online exchanges, compared to 65% of 15–16 year-olds and 67% of 17–18 year-olds.

In reflecting on their motivations for engaging in intimate online exchanges, 15 participants (47%) said they feel it is easier to share personal feelings online than offline. This sentiment was particularly common among girls and adolescents who described themselves during the interview as shy or quiet; 60% of girls and 57% of shy adolescents endorsed this view, compared to 35% of boys and 44% of non-shy adolescents. One of these adolescents, 15 year-old Christina, explained why she



prefers to talk about her feelings through Blackberry Messaging (BBM), “I am not a good person with feelings, and like I am not that good with saying my feelings face-to-face sometimes because I don’t like people to see how I think and what I am feeling.” Christina appears to view her Blackberry as a shield of sorts, protecting her from the discomfiting sense of exposure she feels when talking to her friends in person. By self-disclosing online, Christina feels that her friends can “know how I am feeling, and they could help me with [my personal problems].” Without her Blackberry, Christina’s friends would not have the chance to help her sort through her problems, since she does not feel comfortable enough to talk about them in person.

For 13 year-old Melissa, it is not necessarily that she feels less inhibited online, but rather more in control over how she expresses herself. She explained, “Sometimes there’s things that you want to say but you don’t know how to word it so that it comes out of your mouth right, but I can type it because I know that’s what I am trying to say.” Because she has time to consider her words before she speaks (or types), Melissa feels she can communicate her opinions more fully and clearly.

Two participants, Kyara, age 14, and Madeline, age 13, explained that while they themselves do not find it easier to share personal feelings online, several of their friends do. Kyara reflected, “People are more open on Facebook, like they would say exactly what they are feeling on Facebook, instead of like telling you to your face.” Without online platforms like Facebook, Madeline believes that many of the personal conversations she has with friends would simply never occur.

These personal online conversations may sometimes be disconnected from friends’ offline communications. Jenni, age 17, observed:

...if you talk to somebody [online] and they are just kind of like not talking back, and you are like, ‘What’s wrong with you?’ and they like explode. And all of a sudden you get this big, huge paragraph of all these things going on with them, and they are having like a really bad day, and all this stuff is going on. And you are like, ‘Wow.’ And then you try to see them the next day, and they are just like totally different.

Jenni describes a disjunction between her friends’ online self-disclosure and offline behavior. This disjunction highlights the possibility that, while it may be easier to share feelings online, it may not always be easy to integrate these online disclosures into offline interactions.

## Discussion

In this study, I investigated adolescents’ experiences with and perceptions of their online peer communications. The findings reveal that these online communications support a sense of belonging and self-disclosure, two important mechanisms through which peers influence identity development during adolescence. Casual exchanges, whether through texting, Facebook, or instant messaging, help adolescents to maintain a sense of connection and belonging to their closest friends. When these exchanges take place on the public pages of Facebook, adolescents are able to articulate their peer group membership to a wider audience. The second type of online peer communication, intimate exchanges, provides unique opportunities for adolescents to engage in self-disclosure with their friends.

While both types of online communication reflect offline peer processes, they also alter the qualities of these processes due to the distinct features of digital media technologies. For instance, text messaging and chatting through Facebook allow adolescents to maintain a sense of connection to each other regardless of their physical location or the time of day. While this state of “co-presence” (Ito & Okabe, 2005) fulfills the developmental need for belonging (Brechwald & Prinstein, 2011), its constancy raises questions about adolescents’ ability to achieve an autonomous sense of self. When alone, participants like 17 year-olds Ashley and Jenni said that they reach for their phones and text a friend to ward off feelings of boredom. Evidently, they are unwilling to sit with their boredom for awhile and draw on their inner resources to work through it. For 15 year-old Kyle, the thought of being electronically cut off from his friends for any length of time provoked a feeling of anxiety.

Online exchanges appear also to widen adolescents’ circle of friendships. Most participants talked about using Facebook to communicate with peers with whom they rarely interact in offline contexts. All 26 of these participants described their interactions in positive terms. For some participants, it remains to be seen whether such interactions will lead to meaningful, long-term friendships; for others, like 14 year-old Ellie, participation on Facebook has resulted in one or more valued friendships. For these participants, Facebook has expanded their sphere of connections, providing them with new opportunities to experience a sense of belonging and validation from their peers.

I found that casual online exchanges look somewhat different for boys and girls, as well as adolescents of different ages. Early adolescents and boys were more likely to engage in instrumental online exchanges than girls and older adolescents, with homework discussions being particularly frequent among early adolescents and making plans to see friends particularly frequent among boys. These differences reflect the fact that early adolescents’ and boys’ friendships are more likely to be organized around concrete activities (Buhrmester & Furman, 1987).

The adolescents in this sample use their intimate online exchanges to engage in self-disclosure to their close friends. In this way, intimate exchanges reflect a defining characteristic of adolescent friendships that plays an important role in helping adolescents to articulate and receive feedback on their identities (Buhrmester & Prager, 1995; Youniss & Smollar, 1985). In fact, nearly half of participants—particularly girls and shy adolescents—said they feel it is easier to share personal feelings online than offline. Their explanations were consistent with previous research showing that the perception of reduced nonverbal cues and the feeling of being in control of one’s communications promote self-disclosure online (Schouten et al., 2007). For these adolescents, the absence of digital media technologies and their distinct features might prevent them from engaging to the same extent in this important identity-supporting peer process. It remains to be seen, however, whether adolescents are

successful at integrating their online intimate exchanges into their offline peer interactions. Indeed, Jenni, age 17, said that she sometimes observes a disconnect between her friends' online self-disclosures and their offline behavior.

Consistent with earlier research, girls were more likely to engage in self-disclosure online than boys (Bonnetti et al., 2010; Schouten et al., 2007). This finding parallels girls' greater enthusiasm for offline self-disclosure with their friends (Furman & Buhrmester, 1985; Youniss & Smollar, 1985). However, in contrast to earlier research, the younger adolescents in this sample were more likely to say they engage in intimate online exchanges than the older adolescents (Bonnetti et al., 2010; Schouten et al., 2007). This unexpected finding may be related to the different methods of data collection used in the present study compared to previous studies. Semi-structured interviews produce data that are shaped in part by those topics that are particularly meaningful and salient to participants. In survey research, by contrast, the number and kind of responses are fixed in advance by the researcher. In the present study, it is possible that younger participants spoke more frequently about intimate online exchanges because these conversations are more salient and carry more weight for them due to the fact that self-disclosure is still a relatively new peer process in early adolescence (Brown & Larson, 2009). Caution should be taken when drawing conclusions from this finding and proposed interpretation, however, since I interviewed considerably fewer early adolescents than middle and late adolescents and because the overall sample size is small.

### Limitations and future research

A key strength of qualitative research is the ability it gives researchers to provide a thick description of participants' subjective experiences. However, the small sample sizes that are typically used in such research preclude generalizing findings to a larger population. This is particularly true of the present study due to the distinct cultural and socioeconomic characteristics of Bermuda, as well as the over-representation of private schools in the sample. Studies using larger samples and involving adolescents from other geographic regions would be useful to determine whether the findings reported here hold true for other populations.

Another limitation of this study pertains to its reliance on adolescents' accounts of their online peer communications and the susceptibility of bias that this reliance creates. Future studies could investigate adolescents' perspectives in association with other sources of data, such as direct observations of their digital media use, scores on psychological measures of friendship quality and identity, and the perspectives of key people in adolescents' lives, such as parents and teachers.

### Conclusion

This study contributes to an emerging literature investigating the developmental implications of adolescents' online peer communications. The findings reported here indicate that these communications promote adolescents' sense of belonging and self-disclosure, two important peer processes that support identity development. At the same time, the distinct qualities of computer-mediated communication suggest that these peer processes look somewhat different in a digital era. Moreover, gender and age differences reveal that adolescents' experiences online are not uniform; the characteristics that distinguish adolescents offline also shape their online activities. Collectively, these findings point to the need for subsequent empirical and theoretical work around adolescent development to take into account the digital technologies that have become such an integral part of adolescents' lives.

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### References

- Arnett, J. J. (1996). *Metalheads: Heavy metal music and adolescent alienation; metal heads*. Boulder: WestviewPress.
- Berndt, T. J. (1996). Transitions in friendship and friends' influence. In J. A. Graber, J. Brooks-Gunn, & A. C. Petersen (Eds.), *Transitions through adolescence: Interpersonal domains and context* (pp. 57–84). Hillsdale, NJ England: Lawrence Erlbaum Associates, Inc.
- Berzonsky, M. D. (2003a). Identity style and well-being: does commitment matter? *Identity*, 3(2), 131–142.
- Berzonsky, M. D. (2003b). The structure of identity: commentary on Jane Kroger's view of identity status transition. *Identity*, 3(3), 231–245.
- Bonnetti, L., Campbell, M. A., & Gilmore, L. (2010). The relationship of loneliness and social anxiety with children's and adolescents' online communication. *CyberPsychology, Behavior & Social Networking*, 13(3), 279–285.
- Bortree, D. S. (2005). Presentation of self on the web: an ethnographic study of teenage girls' weblogs. *Education, Communication & Information*, 5, 25–39.
- Boyatzis, R. E. (1998). *Transforming qualitative information: Thematic analysis and code development*. Thousand Oaks, CA US: Sage Publications, Inc.
- boyd, d (2007). Why youth heart social network sites: the role of networked publics in teenage social life. In D. Buckingham (Ed.), *Youth, identity, and digital media* (pp. 119–142). Cambridge, MA: MIT Press.
- boyd, d. (2008). *Taken out of context: American teen sociality in networked publics*. Unpublished dissertation. Retrieved 18.01.09, from <http://www.danah.org/papers/TakenOutOfContext.pdf>
- Brake, M. (1985). *Comparative youth culture: The sociology of youth cultures and youth subcultures in America, Britain, and Canada*. London; Boston: Routledge & K. Paul.
- Brechwald, W. A., & Prinstein, M. J. (2011). Beyond homophily: a decade of advances in understanding peer influence processes. *Journal of Research on Adolescence*, 21(1), 166.
- Brown, B. B. (1990). Peer groups and peer cultures. In S. S. Feldman, & G. R. Elliott (Eds.), *At the threshold: The developing adolescent* (pp. 171–196). Cambridge, MA: HarvardUniversity Press.

- Brown, B. B., & Larson, J. (2009). Peer relationships in adolescence. In R. M. Lerner, & L. D. Steinberg (Eds.), *Handbook of adolescent psychology* (3rd ed.). (pp. 74) Hoboken, NJ: John Wiley & Sons, Inc.
- Buhrmester, D., & Furman, W. (1987). The development of companionship and intimacy. *Child Development*, 50, 1101–1115.
- Buhrmester, D., & Prager, K. (1995). Patterns and functions of self-disclosure during childhood and adolescence. In K. J. Rotenberg, & K. J. Rotenberg (Eds.), *Disclosure processes in children and adolescents* (pp. 10–56). New York, NY US: Cambridge University Press.
- Bukowski, W. M., & Sippola, L. K. (2001). Groups, individuals, and victimization: a view of the peer system. In J. Juvonen, & S. Graham (Eds.), *Peer harassment in school: The plight of the vulnerable and victimized* (pp. 355–377). New York: Guilford Press.
- Collins, W. A., & Steinberg, L. (2006). Adolescent development in interpersonal context. In (6th ed.). In Eisenberg, N., Damon, W., & Lerner, R. M. (Eds.), *Handbook of child psychology: Social, emotional, and personality development*, Vol. 3 (pp. 1003–1067) Hoboken, NJ: John Wiley & Sons Inc.
- Davis, K. (2010). Coming of age online: the developmental underpinnings of girls' blogs. *Journal of Adolescent Research*, 25(1), 145–171.
- Erikson, E. H. (1968). *Identity, youth, and crisis* (1st ed.). New York: W. W. Norton.
- Erikson, E. H. (1980). *Identity and the life cycle*. New York: Norton.
- Furman, W., & Buhrmester, D. (1985). Children's perceptions of the personal relationships in their social networks. *Developmental Psychology*, 21, 1016–1024.
- Hodkinson, P. (2007). Interactive online journals and individualisation. *New Media and Society*, 7(3), 79–104.
- Ito, M., Baumer, S., Bittanti, M., Boyd, D., Cody, R., Herr-Stephenson, B., et al. (2009). *Hanging out, messing around, and geeking out: Kids living and learning with new media*. Cambridge, MA: The MIT Press.
- Ito, M., & Okabe, D. (2005). Technosocial situations: emergent structuring of mobile E-mail use. In M. Ito, D. Okabe, & M. Matsuda (Eds.), *Personal, portable, pedestrian: Mobile phones in Japanese life* (pp. 257–273). Cambridge, MA US: MIT Press.
- Kroger, J. (2007). *Identity development: Adolescence through adulthood* (2nd ed.). Thousand Oaks, Calif: Sage Publications.
- Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics*, 33(1), 159–174.
- Lenhart, A., Ling, R., Campbell, S., & Purcell, K. (2010, April 20). *Teens and mobile phones (Pew Internet & American life project)*. Retrieved 20.02.11, from <http://www.pewinternet.org/~media/Files/Reports/2010/PIP-Teens-and-Mobile-2010-with-topline.pdf>.
- Livingstone, S. (2008). Taking risky opportunities in youthful content creation: teenagers' use of social networking sites for intimacy, privacy and self-expression. *New Media & Society*, 10(3), 393–411.
- Luyckx, K., Schwartz, S. J., Goossens, L., Soenens, B., & Beyers, W. (2008). Developmental typologies of identity formation and adjustment in female emerging adults: a latent class growth analysis approach. *Journal of Research on Adolescence (Blackwell Publishing Limited)*, 18(4), 595–619.
- Marcia, J. E. (1993). The status of the statuses: research review. In J. Marcia, A. Waterman, D. Matteson, S. Archer, & J. Orlofsky (Eds.), *Ego identity* (pp. 22–41). New York: Springer-Verlag.
- Meeus, W. (1996). Studies on identity development in adolescence: an overview of research and some new data. *Journal of Youth and Adolescence*, 25(5), 569–598.
- Meeus, W., Iedema, J., Helsen, M., & Vollebergh, W. (1999). Patterns of adolescent identity development: review of literature and longitudinal analysis. *Developmental Review*, 19(4), 419–461.
- Pugh, M. J. V., & Hart, D. (1999). Identity development and peer group participation. In J. A. McLellan, & M. J. V. Pugh (Eds.), *The role of peer groups in adolescent social identity: Exploring the importance of stability and change* (pp. 55–70). San Francisco, CA: Jossey-Bass.
- Purcell, K. (2011, February). *Trends in teen communication and social media use (Pew Internet & American Life Project)*. Presentation given at Joint Girl Scout Research Institute/Pew Internet Webinar. Available at: <http://www.pewinternet.org/Presentations/2011/Feb/PIP-Girl-Scout-Webinar.aspx>.
- Rubin, K. H., Bukowski, W. M., & Parker, J. G. (2006). Peer interactions, relationships, and groups. In N. Eisenberg, W. Damon, & R. M. Lerner (Eds.), *Handbook of child psychology* (6th ed.). *Social, emotional, and personality development*, Vol. 3 (pp. 571–645) Hoboken, NJ: John Wiley & Sons Inc.
- Savin-Williams, R. C., & Berndt, T. J. (1990). Friendship and peer relations. In S. S. Feldman, & G. R. Elliott (Eds.), *At the threshold: The developing adolescent* (pp. 277–307). Cambridge, MA: Harvard University Press.
- Schouten, A. P., Valkenburg, P. M., & Peter, J. (2007). Precursors and underlying processes of adolescents' online self-disclosure: developing and testing an 'Internet-attribute-perception' model. *Media Psychology*, 10(2), 292–315.
- Selman, R. L. (1981). The development of interpersonal competence: the role of understanding in conduct. *Developmental Review*, 1(4), 401–422.
- Stern, S. (2007). Producing sites, exploring identities: youth online authorship. In D. Buckingham (Ed.), *Youth, identity, and digital media* (pp. 95–117). Cambridge, MA: MIT Press.
- Subrahmanyam, K., & Šmahel, D. (2011). *Digital youth: The role of media in development*. New York: Springer.
- Sullivan, H. S. (1953). *The interpersonal theory of psychiatry*. New York, NY: W. W. Norton & Co.
- Valkenburg, P. M., & Peter, J. (2007). Preadolescents' and adolescents' online communication and their closeness to friends. *Developmental Psychology*, 43(2), 267–277.
- Valkenburg, P. M., & Peter, J. (2009). Social consequences of the Internet for adolescents: a decade of research. *Current Directions in Psychological Science*, 18(1), 1–5.
- Valkenburg, P. M., & Peter, J. (2011). Online communication among adolescents: an integrated model of its attraction, opportunities, and risks. *Journal of Adolescent Health*, 48(2), 121–127.
- Valkenburg, P. M., Sumter, S. R., & Peter, J. (2011). Gender differences in online and offline self-disclosure in pre-adolescence and adolescence. *British Journal of Developmental Psychology*, 29(2), 253–269.
- Walther, J. B. (1996). Computer-mediated communication: impersonal, interpersonal, and hyperpersonal interaction. *Communication Research*, 23(1), 3–43.
- Waterman, A. S. (1992). Identity as an aspect of optimal psychological functioning. In G. R. Adams, T. P. Gullotta, & R. Montemayor (Eds.), *Adolescent identity formation* (pp. 50–72). Thousand Oaks, CA: Sage Publications, Inc.
- Youniss, J. (1980). *Parents and peers in social development: A Sullivan-Piaget perspective*. Chicago: University of Chicago Press.
- Youniss, J., & Smollar, J. (1985). *Adolescent relations with mothers, fathers, and friends*. Chicago: University of Chicago Press.