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Media Multiplexity in Everyday Meaningful Social Interaction: Communication Channels and Maintenance of Close Friendships

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Author Note

This manuscript will undergo peer-review, copyediting, typesetting and reviewing of resulting proofs before it is published in final form. Code and Data needed to reproduce all analysis will be made available after peer - review of the manuscript is complete. This research was supported by a Stanford Human -Centered AI (HAI) seed award and a National Institute of Health award (R01MH125974). The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript. The authors did not report any conflict of interest.

Author contributions for this manuscript were as follows: Conceptualization: MR, SSV, GMH ; Data Curation: MR; Formal Analysis: MR; Funding Acquisition: MR, JZ, GMH; Investigation/Data Collection: MR, JZ, GMH; Methodology: MR, SSV, GHM; Project Administration: MMR; Supervision: GMH; Validation: MR, SSV; Visualization: MR; Writing – Original Draft: MR, SSV, GMH; Writing – Review and Editing: MR, SSV, NV, JZ, GMH.

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Abstract

In today's media landscape, there are an ever-expanding number of communication channels that people can use to communicate within their interpersonal relationships. This study, grounded in Media Multiplexity Theory, investigates how communication channels are used during everyday meaningful social interactions and their impact on close friendships. Using data from an intensive longitudinal field study (N = 1,423 young adults; 27,644 experience sampling observations), we found that young adults used more communication channels during meaningful interactions within their strong tie relationships (e.g., close friends, friends, romantic partners), and tended to have such interactions with strong ties via phone calls or direct messages. In contrast, meaningful interactions with weak ties tended to occur in-person or via video calls. Findings from a social network survey indicated that the odds of the friendship being maintained several months later were higher for those who used more communication channels when having meaningful interactions with their close friends. Overall, the findings support and extend Media Multiplexity Theory by examining communication channels use within dyadic relationships for high quality social interactions and its impact on the maintenance of close friendships, which has implications for how people navigate social connections in an increasingly digital environment.

Keywords: Meaningful Social Interaction, Communication Channel, Media Multiplexity Theory, Interpersonal Relationships, Social Networks

Introduction

In today's media landscape, there are an ever-expanding number of communication channels that young people use to connect with others. These communication channels offer a wide variety of affordances – perceived functionalities that are made possible by the features of a channel or platform (e.g., voice and video calls, group chats, file sharing, reels, stories, Evans et al., 2017; Ronzhyn et al., 2023). Affordances can enable or constrain specific forms of communication, potentially shaping how and why young people interact using a particular channel for a specific social exchange (e.g., Krasanova et al., 2010; Reid & Reid, 2010; Karahanna et al., 2018; Treem & Leonardi, 2013). The communication channels used during social interactions are important because choosing an appropriate channel to convey a message can improve interpersonal relationships (Ledbetter, 2014). In this paper, we apply Media Multiplexity Theory to understand whether communication channels used during *meaningful social interactions* in everyday life: (a) are explained by who is involved in the interaction (i.e., the type of interaction partner) and (b) explain whether the interpersonal relationship is maintained over time (i.e., whether dyads remain close friends months later).

Meaningful social interactions are those deemed to have an emotional or informational impact, which can enhance individuals' lives and well-being (Litt et al., 2020). High quality social interactions characterized by depth and self-disclosure (rather than superficial small talk) have been linked to stronger feelings of social connection, increased happiness, and higher life satisfaction (e.g., Mehl et al., 2010; Milek et al., 2018; Sun et al., 2020). These types of meaningful interactions are more likely to occur with strong social ties (e.g., romantic partners, close friends, and family members) and are most often experienced in face-to-face contexts, rather than through computer-mediated communication (CMC; Litt et al., 2020; Roshanaei et al., 2024). However, what remains unclear is whether use of communication channels during meaningful social interactions varies within

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interpersonal relationships based on the strength of the relationship, and whether that has any impact on the maintenance of close relationships over time.

Media Multiplexity in Interpersonal Relationships

Media Multiplexity Theory (MMT; Haythornthwaite, 2002) offers a valuable framework for examining multimedia communication in interpersonal relationships. Rather than focusing on the effects of any single medium, MMT emphasizes how people in close relationships use multiple channels in complementary ways to support their communication, and that the number of channels used varies according to the strength of the relationship. The strength of a relationship is often conceptualized in terms of either strong or weak ties, in line with Granovetter's (1973) foundational work on tie strength being comprised of a combination of factors, including time spent together, emotional intensity, intimacy, and reciprocity. Haythornthwaite (2005) further classified relationships as "strong ties" if they followed the behaviors and dynamics typical of close relationships (e.g., friendship). In contrast, "weak ties" referred to individuals with whom one communicates relatively frequently, but who are not part of one's close personal networks (e.g., classmates, acquaintances).

To situate MMT in today's digital media landscape, recent scholarship has summarized five key propositions that characterize MMT's contributions (Taylor & Bazarova, 2018). In brief, MMT proposes a positive association between tie strength and the number of media used for communication (Haythornthwaite, 2005; proposition 1). The second proposition argues that communication patterns are shaped more by the strength of the relationship than by the medium itself (proposition 2). Third, MMT suggests a reciprocal and linear causal relationship between tie strength and media use over time. While tie strength is seen as the primary driving force, media use is also expected to influence and shape the relationship between individuals as it evolves (proposition 3). Fourth, changes in media use have a greater impact on weak tie relationships than strong tie

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relationships because strong ties more easily adapt to new communication tools (Haythornthwaite, 2005; proposition 4). Fifth, media use is structured in tiers based on tie strength, with all members of a social group typically sharing access to the same one or two platforms (e.g., email, zoom call). More private channels, such as text messaging, are added as relationships grow stronger (Haythornthwaite, 2000; proposition 5).

The first proposition of MMT has received robust support from empirical studies that demonstrate a positive relationship between tie strength and number of communication channels used (e.g., Baym and Ledbetter, 2009; Ledbetter, 2010; Miczo et al., 2011, Ruppel, Burke, & Cherney, 2017). Altogether, such studies suggest that strong ties do tend to use a wider variety of communication channels in their relationships, compared to weak ties. For example, interactions in close friendships have been associated with the complementary use of phone calls and text messaging. However, many studies testing this first proposition simply count the number of media used (e.g., Ruppel, Burke, & Cherney, 2017). Moreover, the fifth proposition of MMT suggests there may be communication channel preferences among interpersonal relationships within a social group, but there is relatively little examination of the specific types of multimedia channels being used during interactions in everyday life (Parks, 2017). Moreover, no studies to our knowledge have examined MMT in relation to interaction quality to determine whether the first proposition holds for meaningful social interactions. Building on this proposition of MMT, our first research question is: (RQ1) Do strong tie interaction partners (vs. weak tie partners) (a) use more communication channels and (b) prefer specific types of channels during meaningful social interactions?

The third proposition of MMT suggests a reciprocal relationship between the tie strength and media use over time, highlighting how the number of media used can influence interpersonal relationships among dyads (Haythornthwaite, 2000, 2002). Despite the growing empirical support for

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MMT's propositions, much of the evidence is based on cross-sectional data that leaves the longitudinal impact of media multiplexity on relational closeness unexamined. Longitudinal studies are needed to bridge the gap in understanding how relationships and the use of communication channels shape one another over time.

Building on existing typologies of relationship maintenance behaviors (e.g., Canary & Stafford, 1991; Dainton & Aylor, 2002; Dainton & Stafford, 1993), friendship maintenance strategies can include key behaviors such as self-disclosure, shared activities, positive interactions, and mutual support (Fehr, 2000). These maintenance strategies require ongoing effort and reciprocal investment from both parties (Dainton, Zelle, & Langan, 2003) and can be enacted through a variety of communication channels, including face-to-face and CMC channels (Ledbetter, 2010). A notable longitudinal study of instant messaging and relationship quality found that the frequency of instant messaging predicted relational quality six months later, although no evidence for the reverse effect was observed (Valkenburg & Peter, 2009). MMT's third proposition suggests a positive association between dyadic relationships being maintained and use of more multimedia channels during meaningful social interactions. Thus, our second research question examines the explanatory role of communication channels used in relationship maintenance: (RQ2) Do the number and type of communication channels preferred during meaningful social interactions explain whether dyads' remain close friends over time?

The Present Research

In the present study, we revisit Media Multiplexity Theory to examine whether the propositions hold for meaningful social interactions in everyday life. Specifically, we examine how relational tie strength relates to the number and type of communication channels used in everyday meaningful social interactions among dyads, as well as how the use of communication channels can

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support or undermine the maintenance of close friendships. To do so, we present findings from an intensive longitudinal field study of relationships among young adults within a college community to examine (1) the associations between type of interaction partner and the use of various communication channels during meaningful social interactions, and (2) the role of communication channels in maintaining close friendships over time.

Open Practice Statement

The data for this study were collected as part of a broader research project that involves a multi-year longitudinal panel study focused on examining the social factors underlying the mental health of young adults in college. The data and code needed to reproduce our analyses will be accessible on our OSF page after peer-review of the manuscript is complete. The research materials for the broader research project are not publicly accessible at this time, but the Method section describes the relevant procedure and measures.

Method

Participants and Procedure

Participants in this study were undergraduate students from a West Coast university in the United States. Recruitment was conducted through emails sent to the entire undergraduate student body, which invited students to participate in a longitudinal project focused on social connections and well-being in exchange for monetary compensation. Students who consented to participate in the study were asked to complete various survey-based assessments 3 times during the academic year (in the fall, winter, and spring quarters) and were allowed to participate multiple times during their undergraduate studies (each year). The data collected included one-time self-report surveys collected through Qualtrics and repeated ecological momentary assessments (EMAs) collected through a

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mobile app, called WellPing, which is a customized version of the Beiwe research platform (Onnela et al., 2021). Study procedures were conducted in accordance with the guidelines set by the Institutional Review Board at [BLINDED FOR PEER REVIEW].

For the purposes of the study presented here, we focused on one-time self-report surveys collected in Fall 2022 ($N = 2,634$) and Winter 2023 ($N = 1,700$), as well as EMA data collected during the Fall 2022 ($N = 2,126$, Number of EMAs=104,034). The one-time self-report surveys captured demographic information (e.g. gender, age), and included a “*network survey*” in which participants nominated undergraduate students whom they identified as members of their close friend network.

For the EMA data collection, participants installed the WellPing app on their Android or iOS smartphones and received survey notifications (i.e., “pings”) prompting them to complete EMAs. These assessments asked participants to report on their meaningful social interactions, momentary well-being, and contextual factors including their location, activity, relationship partner, and the communication channel used. However, for the purpose of this study, we focused on dyadic meaningful social interactions, their associated interaction partners, and the communication channels which they occurred (see Measures below). The EMA component of the study lasted three weeks, and participants received four pings daily at randomly chosen times between 9:00 AM and 11:00 PM. Participants were allotted a two-hour window to complete the EMA associated with each ping, and in total participants could complete up to 84 EMAs during the study. Participants were compensated \$0.75 per EMA, along with a weekly bonus of \$7 if they completed more than 85% (of the 28 possible pings) per week. Our samples were generally diverse and representative of the student population at our institution (see Table 1).

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Table 1

Descriptive Information About Participants in the Sample

Demographic Characteristics	Percentage
<i>Gender</i>	
Woman	56.21%
Man	29.02%
<i>Race/Ethnicity</i>	
Black or African American	4.79%
East Asian	13.84%
Hispanic or Latino	12.96%
Middle Eastern	1.09%
Native American	0.37%
Pacific Islander	0.22%
South Asian	2.71%
Southeast Asian	7.41%
White or Caucasian	19.34%
Biracial/Multi-racial	23.77%
<i>Family Income Level</i>	
Less than 60k	25.74%
60k to 120k	19.40%
120k to 180k	10.42%
More than 180k	26.97%

Note. The percentages within each major category do not add up to 100 because not all participants responded to each question and some questions allowed participants to select more than one response option.

Measures

Close Friend Network Nominations

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In the Fall 2022 quarter and approximately three months later in the Winter 2023 quarter, participants completed a social network survey. Participants were asked to nominate up to six undergraduate students that make up their Close Friend Network in response to the following question: “*Who are your closest friends?*”. They could enter the names of up to 6 peers into a text field that auto-completed names from the undergraduate student roster at our institution.

Meaningful Social Interaction Nominations

In each EMA observation, participants were first asked about whether they had engaged in any social interaction either in-person or via digital media during the previous hour. If they had a social interaction, they could nominate up to six names of peers they had social interactions with using a text field that auto-completed names from the undergraduate student roster. If participants indicated they socialized with their peers during the past hour, they were then asked to identify the most meaningful social interaction they had by answering the question: “*Which of these interactions (both in person and online) was the MOST meaningful?*”. Participants were then asked follow-up questions about the most meaningful social interaction, including identifying their interaction partner and the communication channel used (described below).

Interaction Partner. Participants were asked about the most meaningful social interactions they had interacted with (“*How would you best describe your relationship to **TARGET**?*”) with response options including “Significant Other/Partner”, “Dormmate/Roommate”, “Friend”, “Classmate”, “Teammate”, “Coworker”, “Residential Staff” (refers to undergraduate peers working in housing-related roles, such as resident assistants or student workers in dormitories; see Figure S1 in the Supplemental Materials for the distribution of responses). In the analyses of interaction partners, we set the strong tie relationship of “Friends” as the reference category.

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Communication Channel. Participants were also asked about the communication channels they had used for their social interaction (*“How did the interaction with **TARGET** take place?”*), with response options including “In person”, “Phone call”, “Video call”, “Direct messaging”, “Social media (e.g., Snapchat story, Instagram post)”. The majority of the most meaningful social interactions occurred In person (77.36 %) and via Direct messaging (17.65 %), see Figure S2 in the Supplemental Materials for the distribution of responses).

Data Cleaning and Processing

To answer RQ1, which examines the main effects of interaction partners on the communication channels used, we used both network survey and EMA data collected in Fall 2022. Before data cleaning, our EMA dataset consisted of 2,126 participants, who provided an average of 62.70 EMA observations ($SD = 18.53$), for a total of 104,034 observations.

We employed several exclusion and filtering steps on the EMA datasets as part of our data cleaning process prior to analysis. First, we excluded all individual EMA observations with extremely high or low response times, which we defined as those that fell outside of the 95% confidence interval around the mean response time of 106 seconds (8,375 observations excluded). Second, we excluded participants who completed fewer than five EMA observations to ensure sufficient data in line with the requirements of multilevel modeling (114 participants excluded). Then, given the focus of our research on meaningful social interaction, we excluded all individual EMA observations in which participants reported not having had any meaningful social interactions (# observations excluded: 66,317). In the final step, observations were excluded if the participant characterized a particular nominated peer using more than one type of interaction partner label during the study (e.g., identifying a person as both a Friend and Classmate at different times during the study period) (#

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observations excluded: 1,211). After data cleaning, our dataset consisted of 1,423 participants, who provided an average of 57.68 EMA observations ($SD = 19.08$), for a total of 27,644 observations.

To create the dyadic-level dataset for our analysis, we merged the cleaned EMA dataset (of reported meaningful social interactions with various dyads) with the close friend network nomination data. Doing so allowed us to create four derived variables to capture media multiplexity within dyadic relationships. The first derived variable was the *number of communication channels* used by the dyad, which was created by summing the total number of distinct channels used during meaningful social interactions within each dyad over the study period (this count variable ranged from 1 to 5). The second derived variable was *close friendship* to assess whether close friends were involved in the meaningful social interaction, which was created by matching close friend network nominations with the EMA reports of daily interactions involving those same individuals (1 = close friend interaction, 0 = not a close friend interaction). The third derived variable was *close friendship maintenance* to assess whether each close friendship nominated in the Fall 2022 network survey was still reported as a close friendship in the subsequent Winter 2023 quarter (1 = still close friends, 0 = not close friends). The fourth set of derived variables reflected the *preference for communication channels* among dyads, which was the proportion of each channel type used within dyads across the study period. For example, if a dyad had 12 meaningful social interactions during the study period, and 2 occurred face-to-face while 10 occurred via direct messaging, the preference for face-to-face interaction was .166 ($2/12 = .166$) and for direct message was .833 ($10/12 = .833$).

Analytical Strategy

To answer our research questions, we constructed a “one-with-many” (OWM) model (Kenny & Winquist, 2001; Kenny et al., 2006; Kenny et.al., 2020; Brinberg et al., 2022) which is used to examine features of multiple dyadic interaction in which a single person (undergraduate student

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participant) engages with multiple others (e.g., classmates, friends). In the present study, we focused on the between person differences in the outcomes of interest given that we had dyad-level interaction data, with no reciprocal reports from the interaction partners (Brinberg et al., 2022).

Due to the structure of our data, the nesting of dyads within individuals in the reciprocal one-with-many (OWM) models, we used frequentist multilevel models, using the lme4 package (Bates et al., 2015) in R version 4.4.1 (R Core Team, 2018). We included a random intercept for each participant to account for between person variability (Bliese, 2016). We followed recommendations for multilevel models with regard to centering and standardizing variables specifically, between-person variables were sample-mean centered and standardized (Curran & Bauer, 2011; Yaremych et al., 2021). Moreover, the dyad-level interaction partner predictor was coded with a meaningful reference category, which was “friends” (Brinberg et al., 2022).

We included a number of control variables in our models, including gender at Level 2, to account for the fact that gender has been associated with differences in using different communication channels (e.g., Gamble & Gamble, 2020, Verga et.al, 2023, Cox et al., 2018; Matud et al., 2019). We also included the number of observations per person (account for differences in the total number of EMAs completed by each participant, regardless of whether they reported socializing or not) and the total number of meaningful social interactions per participant (account for the level of meaningfulness in socializing for each participant) at level 2. Tables S1, S4, and S7 in the Supplemental Materials for models including control variables along with ICC values.

To answer RQ1, we computed 12 models, predicting either (a) *number of communication channels* or (b) *preference for five types of channels* (face-to-face, video calls, phone calls, direct messages, or social media) as the dependent variables. The independent variables included the covariates along with the relationship type, resulting in a *close friendship* model and an *interaction*

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partner model for each of the six dependent variables. Formally, the model equation for RQ1, examining the main effects of relationship type on communication channels used during meaningful social interactions was specified as follows:

$$\begin{aligned} (1) \text{ Number or Preference for Communication Channel }_{ji} &= \beta_0 + \beta_1 \text{ Close Friend or Interaction Partner }_{ji} + e_{ji} \\ (2) \beta_0 &= \gamma_{00} + \gamma_{01} \text{ Gender}_i + \gamma_{02} \text{ Number of Observations}_i + \gamma_{03} \text{ Number of Meaningful Social Interaction}_i \\ &\quad + u_{0i} \\ \beta_1 &= \gamma_{10} \\ \beta_2 &= \gamma_{20} \end{aligned}$$

To answer RQ2, we computed 2 models, predicting *Close Friendship Maintenance* as the dependent variable. The independent variables included the (a) *number of communication channels* and the b) *preference for five types of channels*. Formally, the model equation for RQ2, examining the main effects of communication channels used during meaningful social interactions on maintaining the dyadic close friendships over the subsequent quarter, was specified as follows:

$$\begin{aligned} (2) \text{ Close Friendship Maintenance}_{ji} &= \beta_0 + \beta_1 \text{ Number or Preference for Communication Channel }_{ji} + e_{ji} \\ (2) \beta_0 &= \gamma_{00} + \gamma_{01} \text{ Gender}_i + \gamma_{02} \text{ Number of Observations}_i + \gamma_{03} \text{ Number of Meaningful Social Interaction}_i \\ &\quad + u_{0i} \\ \beta_1 &= \gamma_{10} \\ \beta_2 &= \gamma_{20} \end{aligned}$$

Results

Explaining the number of communication channels used

Consistent with the first proposition of MMT, our results indicated that participants used a greater number of communication channels while engaging in meaningful social interactions with their close friends, compared to those who were not in their close friend network ($B = 0.369, p < 0.001$; Table 2). Moreover, we observed a similar pattern for friend dyads, compared to other types of interaction partners. Compared to meaningful interactions with friends, participants used fewer

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communication channels while engaging in meaningful social interactions with their classmates ($B = -0.206, p < 0.001$), coworkers ($B = -0.259, p < 0.001$), teammates ($B = -0.164, p < 0.001$), residential staff ($B = -0.174, p < 0.01$), and even roommates ($B = -0.077, p < 0.001$). However, participants used a greater number of communication channels during meaningful social interactions with their romantic partners ($B = 0.688, p < 0.001$), compared to their friends.

Explaining the type of communication channels used

In terms of the types of communications channels used among dyads, our results indicated that participants were more likely to engage in meaningful social interactions via phone calls ($B = 0.008, p < 0.001$) and direct messaging ($B = 0.085, p < 0.001$) with their close friends, compared to those who were not in their close friend network (Table 2). We observed a similar pattern for meaningful interactions with romantic partners, with participants being more likely to engage in meaningful social interactions via phone calls ($B = 0.015, p < 0.05$), direct messaging ($B = 0.040, p < 0.05$), as well as video calls ($B = 0.015, p < 0.05$). Compared to interactions with friends, participants were more likely to have meaningful social interactions with weaker ties via face-to-face interaction (classmates $B = 0.098, p < 0.001$; coworkers $B = 0.064, p < 0.01$; teammates $B = 0.092, p < 0.001$; roommates $B = 0.128, p < 0.001$), and video calls (classmates $B = 0.018, p < 0.001$; coworkers $B = 0.064, p < 0.001$; teammates $B = 0.011, p < 0.05$).

Relationship maintenance over time

Of the 2,995 close friendships dyads nominated in both fall quarter network survey and EMA, 57% of those dyads remained close friends the following winter quarter (reflecting relationships that were maintained with 769 individuals). In contrast, 43% of those dyads were no longer nominated as close friends (reflecting relationships that were not maintained with 671 individuals). Our results indicated that close friends who used a greater number of communication channels for meaningful

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interactions had nearly double the odds of maintaining the relationship the subsequent quarter ($OR = 1.983, p < 0.001$; Table 3). However, the odds of the close friendship being maintained were unrelated to the total number of meaningful interactions reported among dyads, nor to the preferences for specific communication channels among dyads.

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Table 2

Multilevel Models Explaining the Use of Communication Channels Among Dyads During Meaningful

Social Interactions

	No. of Channels	Face-to-Face	Video Call	Phone Call	Direct Message	Social Media
	<i>Est. [95% CI]</i>	<i>Est. [95% CI]</i>	<i>Est. [95% CI]</i>	<i>Est. [95% CI]</i>	<i>Est. [95% CI]</i>	<i>Est. [95% CI]</i>
<i>Covariates</i>						
Woman	0.020** [0.007, 0.032]	-0.011* [-0.021, -0.001]	0.003* [0.000, 0.005]	0.002 [-0.001, 0.005]	0.006 [-0.002, 0.015]	0.001 [-0.000, 0.002]
No. of Observations	-0.005 [-0.019, 0.009]	-0.002 [-0.012, 0.009]	0.003* [0.001, 0.006]	-0.002 [-0.005, 0.001]	-0.002 [-0.012, 0.007]	0.001 [-0.001, 0.003]
No. of Meaningful Interactions	0.081*** [0.065, 0.097]	-0.002 [-0.014, 0.010]	-0.004** [-0.008, -0.001]	0.001 [-0.002, 0.005]	0.010 [-0.001, 0.021]	-0.001 [-0.003, 0.001]
<i>Close Friendship Model</i>						
Close Friends	0.369*** [0.348, 0.389]	-0.089*** [-0.103, -0.075]	0.001 [-0.004, 0.006]	0.008*** [0.003, 0.012]	0.085*** [0.073, 0.098]	-0.004** [-0.007, -0.001]
<i>Interaction Partner Model</i>						
Classmates	-0.206*** [-0.242, -0.171]	0.098*** [0.075, 0.122]	0.018*** [0.010, 0.026]	-0.009* [-0.017, -0.001]	-0.106*** [-0.127, -0.085]	-0.004 [-0.009, 0.001]
Coworkers	-0.259*** [-0.326, -0.191]	0.064** [0.018, 0.109]	0.064*** [0.048, 0.080]	-0.005 [-0.020, 0.010]	-0.115*** [-0.155, -0.075]	-0.007 [-0.016, 0.002]
Teammates	-0.164*** [-0.210, -0.119]	0.092*** [0.061, 0.123]	0.011* [0.001, 0.022]	-0.008 [-0.018, 0.002]	-0.090*** [-0.117, -0.063]	0.001 [-0.005, 0.007]
Residential Staff	-0.174** [-0.276, -0.072]	0.055 [-0.014, 0.124]	0.012 [-0.012, 0.036]	0.001 [-0.021, 0.023]	-0.071* [-0.131, -0.011]	0.015* [0.002, 0.029]
Roommates	-0.077*** [-0.104, -0.049]	0.128*** [0.109, 0.147]	-0.011*** [-0.017, -0.004]	-0.013*** [-0.019, -0.007]	-0.100*** [-0.116, -0.083]	-0.003 [-0.007, 0.001]
Romantic Partners	0.688*** [0.632, 0.745]	-0.074*** [-0.113, -0.036]	0.015* [0.001, 0.028]	0.015* [0.003, 0.027]	0.040* [0.006, 0.073]	0.006 [-0.001, 0.014]

Note. In the Close Friendship Model, the reference category for Close Friends was “Not a Close Friend” (derived from the network survey). In the Interaction Partner Model, the reference category for the individual interaction partners was “Friend” (derived from the EMA surveys). * p<0.05, ** p<0.01, ***<0.001

Table 3*Multilevel Models Explaining Close Friendship Maintenance from Communication Channels*

	<i>Close Friendship Maintained Est. [95% CI]</i>
<i>Covariates</i>	
Woman	1.318*** [1.140, 1.525]
No of Observations	1.524*** [1.312, 1.771]
No of Meaningful Interactions	0.899 [0.755, 1.071]
<i>Communication Channel Model</i>	
Number of Communication Channels	1.983*** [1.699, 2.316]
Pref for Communication Channels	
Face-to-Face	0.720 [0.359, 1.445]
Video Call	1.015 [0.850, 1.211]
Phone Call	0.899 [0.694, 1.165]
Direct Messaging	0.800 [0.424, 1.509]
Social Media	0.939 [0.845, 1.044]

Note. Close friendship maintenance assesses whether each close friendship nominated in the Fall 2022 network survey was still reported as a close friendship in the subsequent Winter 2023 quarter (1 = still close friends, 0 = not close friends). Est. = Odds Ratio estimates. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Discussion

This study examines how media multiplexity plays out in the context of everyday meaningful social interactions. Focusing on the first and third propositions of Media Multiplexity Theory, we show how tie strength among dyadic interaction partners relates to the use of communication channels, and whether the use of communication channels explains close friendship maintenance over time. Overall, our findings support the propositions of Media Multiplexity Theory, while also highlighting novel ways that channel use varies among strong and weak tie dyads when having meaningful social interactions. Notably, our longitudinal study is also one of the few to examine the longer-term impacts of media multiplexity for the maintenance of close friendships.

Differences in Media Multiplexity Among Strong and Weak Tie Dyads

Our findings support the foundational proposition of MMT by showing that even during meaningful social interactions stronger ties tend to use a greater number of communication channels than weaker ties. Specifically, we found that young adults used a greater number of channels during interactions with those in their close friend network, compared to those who were not identified as close friends. In general, meaningful social interactions among friend dyads occurred over a greater number of channels, compared to any other type of interaction partner (e.g., classmates, roommates). The only exception to this pattern of findings was for romantic partner dyads, who did use more communication channels than friend dyads. These findings indicate that the first proposition of MMT holds for meaningful social interactions, while providing nuance by examining the specific kinds of interaction partners that make up strong and weak tie relationships.

We also found differences among the interaction partners in terms of their preferences for communication channels. Meaningful social interactions with close friends, friends, and romantic partners tended to occur via phone calls and direct messaging. In contrast, meaningful social

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interactions occurring dyads considered to be weaker ties (e.g., classmates, teammates, coworkers) were more likely to occur face-to-face and via video calls. These findings extend the first proposition of MMT by examining whether strength of interpersonal relationships explains channel preferences. By examining such preferences among peers within a university community, the findings also add to our understanding of the fifth proposition of MMT, which suggests that media use is organized in tiers based on tie strength, with members of a social group typically sharing access to one or two core platforms (Haythornthwaite, 2000).

Given that meaningful social interactions often involve emotional or informational depth (Litt et al., 2020), the different channels used during meaningful social interactions among interaction partners can also be understood through the lens of other communication theories. Media richness theory (Daft & Lengel, 1984, 1986), for example, provides a particularly relevant framework for understanding how communication channels vary in their capacity to convey complex information. Richer media such as face-to-face interactions or video calls are better suited for complex, unclear, or emotionally intense communications, whereas leaner media like text messages are seen as adequate for routine and simpler communication (Ishii et al., 2019). At first glance, our findings might seem to diverge from the expectation derived from media richness theory. In particular, we observed that meaningful social interactions with interaction partners considered to be weaker ties were more likely to occur via richer channels, whereas interactions with partners considered to be stronger ties were more likely to occur via leaner channels. However, these findings might partially be explained by the type of interactions participants reported on and the characteristics of the research population. Specifically, it seems likely that with strong ties (e.g., close friends, friends, romantic partners), participants engage in meaningful interactions through leaner media because of the already established relational strength and frequent communication. In contrast, meaningful social

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interactions with weak ties (e.g., classmates, coworkers) may require richer channels to facilitate emotional connection or reduce ambiguity, as these relationships are less well established.

Media Multiplexity Sustains Close Friendships

Our findings also align with the third proposition of media multiplexity theory, which emphasizes the role of multiple media channels in sustaining a dyad's relationship over time (Haythornthwaite, 2000, 2002). Close friend dyads who used a greater number of media channels during their meaningful interactions had higher odds of remaining close friends the following academic quarter. Notably, preferences for specific communication channels among close friend dyads did not explain whether the relationship was maintained. Our findings are in line with prior research showing that people often use a variety of media channels to maintain their relationships (Ramirez & Broneck, 2009; Lee & Dworkin, 2023; Corder et al., 2024), but extend them by focusing on a close friend network among peers at university.

The characteristics of the research population (i.e., young adults in a university setting) may also help explain our findings. College students begin their academic journey in the process of forming new friendships and are often distanced from their established strong social ties (e.g., high school close friends, family members). In the early stages of friendship, having positive interactions, sharing activities, and mutual supportiveness can help friends to maintain their closeness (Fehr, 2000; Schaefer et al., 2011; Hall, 2019), and using many channels may be most beneficial for maintaining existing close relationships.

Limitations and Future Directions

Our findings should be considered with three main limitations in mind that point to directions for future research about media multiplexity during meaningful interactions. First, the self-report measures used to assess meaningful social interactions could be improved. In this study, we asked

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participants whether they had a social interaction during the past hour, and if yes to nominate up to six peers they socialized with. Participants were then asked to indicate which of those peer interactions was most meaningful and respond to questions about the interaction. Future work should ask participants to rate the extent of meaningfulness (e.g., from not meaningful at all to very meaningful) to better capture the degree to which each interaction was perceived as meaningful. Using a rating scale would allow for a more nuanced assessment of how meaningful interactions are, particularly when comparing conversations between dyads that vary in tie strength. This is especially important given that tie strength can vary within similar interaction partner categories (e.g., coworkers are typically considered weak ties, but some may be strong ties; Marsden et al., 2012).

Second, expanding the focus beyond interactions with undergraduate peers to include a broader range of contacts within a person's social network (e.g., professors, university staff, family members, and community members) would provide a more comprehensive view of young adult's communication patterns. This broader perspective is especially important for capturing the full range of contexts in which meaningful interactions occur, as interactions outside of peer groups may be experienced as equally or even more meaningful depending on the interaction partner and relationship.

Finally, our samples were recruited from a West Coast university community in the United States, so the findings likely generalize to American young adults in college. However, future studies could extend our work by recruiting participants from other populations (e.g., adolescents in high school, adults in the workplace), and different cultural contexts to test the external validity of our findings (e.g., different countries with their own cultural norms about communication channel selection). Thus, a promising future direction lies in better understanding how the contexts in which social interactions occur relate to the use of communication channels.

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