

Running Head: NICHE AND NETWORK

Interpersonal Media Among Americans' Sympathy Groups:
Theory of the Niche and Satisfying Social Needs

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Abstract

This manuscript extends the theory of the niche by examining the frequency of interpersonal media use among participants' personal network, and by reporting the degree to which individuals perceive three social needs are satisfied by nine forms of communication. From April 21 to May 3 of 2021, a quota sample of American adults ($N = 1,869$) completed four name generation tasks to identify up to 16 alters, leading to an average of four alters per person ($n = 7,471$). Participants indicated the frequency with which they communicated with each alter using eight interpersonal media as well as face-to-face communication in the past year. Participants' relationship partner type (e.g., spouse, friend) was tied to media use, which suggests particular media are favored for distinct relationship types. Analyses of the social needs (i.e., causal conversation, meaningful talk, efficient exchange) suggested a clear hierarchy among interpersonal media and minimal niche overlap. The association between need satisfaction and frequency of use, however, demonstrated that as people perceive their social needs being met they more frequently use all interpersonal media. Taken together, the results suggest that although there are differences between interpersonal media in terms of perceived need fulfilment, increased experience with using interpersonal media with one's personal network is tied to increased perceptions of the modality's ability to meet social needs. The results are discussed in light of theory of the niche and channel expansion theory.

Keywords: channel expansion theory; interpersonal media; name generation task; social networks; theory of the niche

Interpersonal Media Among Americans' Sympathy Groups: Theory of the Niche and Satisfying Social Needs

The past 25 years has witnessed several revolutions in the access to and adoption of the internet and mobile communication (Rainie & Wellman, 2012). In the past decade, the rapid adoption of smartphones has changed the preferred form of internet access while social media platforms have rushed to integrate various modalities of communication (e.g., video chat, text) into their mobile apps. Presented with an ever-expanding suite of options, individuals use only a limited set of modalities to meet their social needs and maintain their relationships (Hall, 2020; Ledbetter et al., 2016; Ruppel & Burke, 2015). To understand how media choice maps onto communication with individuals' most important relationships, herein referred to as the sympathy group (Dunbar, 2021), research should document the who and how often of interpersonal media use.

Theory of the niche is a suitable theory for such inquiry (Dimmick et al., 2000; Dimmick et al., 2011; Ramirez et al., 2008). One central presumption of the theory is that media, especially media with similar capabilities and satisfying similar needs, compete with each other to occupy a media niche (Dimmick et al., 2000; Dimmick et al., 2011; Ramirez et al., 2008). Keeping in touch with friends and family over geographic distance is a major reason for interpersonal media use (Hall & Wozidlo, 2021). The present investigation will demonstrate that the theory of niche could link the functionality of media (e.g., what it is used for) with the identities of corresponding relationship partners. Following in the niche tradition, the present manuscript will focus on eight modes of *interpersonal media*, which are “communication channels that allow for person-to-person conversation” (Dimmick et al., 2011, p. 2).

The present manuscript has several goals. In response to past calls to further explore

social needs (Ruppel et al., 2018), this manuscript will examine the perceived niche of eight interpersonal media as well as face-to-face (FtF) communication on three dimensions of sociality (i.e., causal conversation, meaningful talk, efficient exchange). Second, developing the concept of competitive superiority (Ramirez et al., 2008), this manuscript will link relationship partner characteristics with interpersonal media preference, expanding past research on mediated maintenance of friends (Ruppel et al., 2018) and family (Hall & Woszildo, 2021; Ledbetter et al., 2016). Finally, this manuscript will document the frequency of use of interpersonal media among a quota sample of Americans ($N = 1,869$). Similar projects (e.g., Boase et al., 2006; Tillema et al., 2010) were collected in the first decade of the 2000s. Since then, interpersonal media options have expanded, warranting an updated exploration of media use in interpersonal relationships. In sum, the present manuscript will advance the theory the niche by integrating partner characteristics and social needs among nine forms of communication, and will document the who and the how often of interpersonal media among Americans' sympathy groups.

Theory of the Niche

Theory of the niche is a theoretical framework that explains the emergence and survival of competing media based on their ability to satisfy users' needs. The concept of the niche of a medium is defined by "the resources that support its existence such as gratification utilities or needs satisfied for users" (Dimmick et al., 2011, p. 3). A niche is shaped by the purpose and function of the medium as defined by individuals who use it (Dimmick et al., 2011; Ramirez et al., 2008). Importantly, the niche emerges from *how* media are used—not by the inherent qualities or capabilities of the medium alone – which is consistent with the social construction of technology (Baym et al., 2004; Madianou & Miller, 2012).

Theory of the niche is rooted in the concept of need gratification, as derived from uses

and gratifications theory (Dimmick et al., 2000). When two (or more) modalities serve the same function and gratify the same need, they are in competition. Gratification opportunities represent the flexibility of a medium to meet the needs of the user, both in terms of time and geographic restraints and by patterns of use. The modern mobile media landscape has removed nearly all temporal and geographic boundaries of communication, which suggests gratification opportunities are increasingly defined by patterns of use, rather than concrete boundaries, such as hardline internet access or geographic access (Hall, 2020). These concepts inform the concept *gratification niche* (Ramirez et al., 2008), which is a characterization of a medium based on its capabilities, its properties shared with similar media, and its potential to satisfy user needs.

There are three distinguishing features of niches: niche breadth, niche overlap, and competitive superiority. Niche breadth is “the degree to which a medium satisfies a relatively broad or relatively narrow spectrum of media-related needs” (Ramirez et al., 2008, p. 531). Each modality can be generalized or specialized; generalist modalities possess capabilities to satisfy a wide range of needs and gratifications, and specialist modalities are associated with a smaller range of social needs and gratifications (Dimmick et al., 2000; Ramirez et al., 2008). A modality that serves a variety of functions and satisfies a range of needs offers users greater flexibility, and can, thus, occupy several niches at once (Dimmick et al., 2000). In other words, the more needs gratified and purposes served by a modality, the broader the niche it occupies (Dimmick et al., 2000; Ramirez et al., 2008). Second, niche overlap is “the extent to which media are perceived as similar, indicated by the ‘distance’ between their gratification niches” (Ramirez et al., 2008, p. 531). The higher the degree of overlap, the more likely that one will substitute for the other. When overlap is low, it is unlikely that a modality will completely substitute for another (Dimmick et al., 2000). The theory of the niche suggests that one modality (e.g., voice

call) competes with another (e.g., video chat) when the overlap is high in terms of need gratification. Third, competitive superiority is “the extent to which one or the other of a pair of media provide greater gratification” (Ramirez et al., 2008, p. 532). Competitive superiority is why one medium is selected over another when they function similarly (Dimmick et al., 2011).

Relational Partners and Social Needs

The present manuscript will develop two components of the theory of the niche: access to specific relational partners and greater specification and comparison of three social needs. Addressing relationship partner, Dimmick et al. (2011) limit their investigation to “those with whom a user has formed a relationship” (p. 3), and prior foci on long-distance calls, IM, and personal email (e.g., Dimmick et al., 2000; Ramirez et al., 2008) focused on close relationships. A richer focus on relational partner identity can expand our understanding of how niches form, are sustained, and when they are in competition. Second, a foundational element of theory of the niche is the degree of need satisfaction. Published work on the theory (e.g., Dimmick et al., 2000; Dimmick et al., 2011; Ramirez et al., 2008) focused primarily on social needs, particularly relational maintenance and interpersonal communication. Recognizing that interpersonal media are primarily used to serve social needs limits potential patterns of use of media. The present investigation only extends theory of the niche for relational purposes and for social needs.

When distinguishing the capacity for different impersonal media to meet social needs, channel expansion theory (Carlson & Zmud, 1999; D’Urso & Rains, 2008; Vlahovic et al., 2012) offers several insights. Specifically, the theory suggests users’ past experiences with the mode of communication and the pre-existing relationship of communication partners both contribute to the perception of media richness. Although media richness is not synonymous with social need gratification, research suggests that individuals’ prior experiences with technology facilitates

their ability to accomplish their communication goals (D'Urso & Rains, 2008; Walther, 2011). This is consistent with theory of the niche in that user practices of communication inform niche gratification. In as much as the perception of need gratification influences patterns of media use, patterns of use likely inform perceptions of a modality and its ability to gratify users' social needs.

Relationship partner. The social construction of technology perspective asserts that people adopt, modify, and personalize their patterns of mediated communication with one another (Baym et al., 2004; Madianou & Miller, 2012). Consistent with the theory of the niche, this perspective asserts that modalities are not strictly limited by their technological features. Instead, the way they are used (or not used) give rise to their niche. A similar observation is that media have become *interpersonalized* (Parks, 2017). One articulation of this process is Hall (2020)'s media matching principle, which asserts that "we keep using [interpersonal] media because of who is there, not because of what they do" (p. 38). Interpersonal media differ from other media because interpersonal media require another person to adopt and use it so that it can be used as intended. Hall (2020) conceives of a medium becoming interpersonalized when it enables reliable access to another person. For example, young adults report using a particular social media platform to access a specific relational partner (e.g., "I know she'll see what I want to say that way, because she goes on Facebook a lot.") (Eden & Veksler, 2016, p. 128). Complementary research on layers of electronic intimacy (Liu & Yang, 2016; Yang et al., 2014) suggest that media choice and relationship stage are tightly bound, wherein certain modalities are reserved for particular types of relational partners varying in levels of intimacy.

The present investigation will frame this insight in terms of theory of the niche by arguing that access to particular relational partners is a component of competitive superiority.

Within certain relationships types (e.g., long-distance friends) patterns of media choice vary considerably (Ruppel et al., 2018), but media choice patterns coalesce when compared *across* partner types (e.g., co-workers vs. friends) (Kim et al., 2007; Yang et al., 2014). These observations, when formalized using the terminology of competitive superiority, suggests that some interpersonal media are superior for filling the niche of relationship maintenance by virtue of their access to specific relational partners. For example, among families of international migrants, if an important family member does *not* have access to a particular modality or platform, this barrier prevents other family members using that medium to maintain the relationship (Madianou & Miller, 2012). Thus, families often conform to one another's media preferences to simply maintain access to each another (Hall & Wozidlo, 2021).

Social needs. A modality's ability to meet specific social needs is the central component in its ability to occupy a gratification niche. Interpersonal media are able to satisfy a variety of social needs, including relationship maintenance, support provision and advice, sharing of instrumental information, affection, and esteem (Dimmick et al., 2000; Dimmick et al., 2011). Accordingly, this manuscript will restrict its focus on social needs satisfied by individuals' closest relationship partners (i.e., one's sympathy group) via interpersonal media.

Drawing from theory of the niche and rich qualitative and descriptive studies of media use (e.g., Eden & Veksler, 2016; Tillema et al., 2010; Yang et al., 2014), the present investigation focused on three discrete forms of interaction that satisfy the broader need of sociability: *relaxed and casual interaction, meaningful and personal interaction, and efficient or instrumental interaction.* All three forms of interaction can be thought of under the overall umbrella of relational maintenance in close relationships (Dimmick et al., 2000; Dimmick et al., 2011; Ramirez et al., 2008) and are distinct types of communication episodes (Hall, 2020). These

three forms of interaction do not represent a comprehensive list of ways to communicate or ways to meet social needs in the broadest sense. However, in past qualitative investigations (e.g., Eden & Veksler, 2016), these three needs are repeatedly mentioned when differentiating the choice of one modality over another, suggesting they are intuitive and conceptually distinct. Foundational work on theory of the niche distinguish efficiency (e.g., email), meaningful conversation (e.g., phone calls), and hanging out (e.g., IM) (Dimmick et al., 2000; Dimmick et al., 2011; Ramirez et al., 2008). To develop the concept of competitive superiority in association with relationship partner access, we ask:

RQ1: To what degree is modality use associated with relational partner type (e.g., friend, romantic partner, family member, etc.)?

To document the degree of niche breadth and overlap, we ask:

RQ2: To what degree do modalities differ in their niche based on differences in their ability to meet three social needs (e.g., *relaxed and casual interaction*, *meaningful and personal interaction*, and *efficient or instrumental interaction*)?

Finally, to explore the degree to which niche gratification and interpersonal media use are linked, we ask:

RQ3: To what degree does fulfillment of social needs predict frequency of media use within Americans' sympathy group?

Americans' Interpersonal Media Landscape

The final goal is to update similar investigations of interpersonal media habits (e.g., Boase et al., 2006; Kim et al., 2007; Tillema et al., 2010). In the Netherlands, Tillema et al. (2010) compared modes of communication, including FtF and interpersonal media, in an effort to understand how often people communicate with close partners, and Boase et al. (2006)

examined the media habits of Americans core social networks during a period of rapid adoption of internet and mobile technology. The present investigation uses four name generation tasks (Marsden, 1987) to identify individuals' sympathy group, which references the 12-15 most important relationships in people's lives (Dunbar, 2021). This group is durable, occupies a large portion of all interpersonal media use, and is critical in meeting individuals' emotional and social needs throughout life (Dunbar, 2021). A combined focus on interpersonal relationships and interpersonal media, the present manuscript offers an updated snapshot of American's mediated communication habits in the year following the outbreak of the COVID-19 pandemic.

METHOD

From April 21 to May 3 of 2021, a representative panel of American adults was surveyed by the Siena College Research Institute through Lucid, a company that maintains a quota sample of American adults that proportionally reflects the country's population based on age, sex, political affiliation, region of the country, and race and ethnicity. All measures were completed via an online survey, and participants were compensated by Lucid in a manner consistent with the terms of their agreement. These procedures were approved by a university IRB.

Participants. Among the final sample ($N = 1,869$), 46.2% identified as female, 53.1% as male, and .6% identified as transgender male or female, non-binary, or by filling in an "other" fill-in-the-blank box. The mean age of participants was 47.5 years old ($SD = 17.58$, range = 18-93, $mdn = 47$). Participants identified as many race and ethnicity categories as they wanted: 74.1% identified as White, 11.0% as Black/African-American, 7.1% as Latino/a/x/Hispanic (of any race), 6.6% as Asian-American, 1.9% as Native-American, .2% as Pacific Islander, .2% as Mixed Race, and .7% identified as an "other" race or ethnicity. Six percent of participants did not choose a race or ethnicity. Participants indicated their completed years of education income

on a 7-pt ordinal scale from 1 = did not complete high school to 7 = completed advanced degree. The modal level of education was high school graduate (34.9%), the median was having completed “some college” (13.4%). Additionally, 10.2% were currently seeking an associates or bachelor’s degree. Participants indicated their household income on a 12-pt ordinal scale that increased in increments of \$10K up to \$100K, with the final two categories representing a larger range: \$100K-150K and more than 150K. Income was bimodally distributed: \$20,000-29,999 (12.3%) and \$100,000-\$149,999 (14.4%) with a median of \$50,000-\$59,999. Participants were primarily married or engaged (47.4%) or single (28.4%), with fewer in a committed dating relationship, but not engaged or married (7.7%). Others indicated they were divorced (9.7%), widowed (5.2%), or separated (1.1%). Most participants (61.4%) had no children under 18 at home. Twenty-five percent of participants lived alone. Most participants were currently employed (54.4%), of which 77% were employed full time. Of those who were not currently employed, 51.1% were retired, 25.7% were unemployed, 7.2% were full-time caregivers, 6.8% were full-time students, 6.1% were on disability, and 3.2% listed an “other” situation. **Measures**

After consenting to participate and completing demographic measures, participants were asked to complete four name generation tasks. (i) Participants were asked to generate the first name or initials of up to five members of their *discussion* network using the following prompt: “From time to time, most people discuss important matters with other people. Looking back over the last year, do you have at least one person with whom you discussed matters that are important to you?” (Marsden, 1987, p. 123). Then, (ii) participants were asked to generate the first name or initials of up to five members of their *core* network using the following prompt: “Now let’s think about people you know in another way. Looking back over the last year, did you have at least one person who was especially significant in your life that you haven’t

mentioned?” (Hampton et al., 2011, p. 140). Then, (iii) participants were asked to generate the first name or initials of up to three members of their *interaction* network using the following prompt: “Are there people you have regular and meaningful interactions with that you haven’t mentioned?” This prompt was developed for the present investigation with the intention of capturing ties that are frequent communication partners, but not necessarily significant or those with whom they discuss important matters. Finally, (iv) participants were asked to generate the first name or initials of up to three members of their *help* network using the following prompt: “If you need help (e.g., figuring out a problem, to complete an odd job at home, or to lend a hand), do you have at least one person who can you ask that you haven’t mentioned?” This final question was modified from a task developed by Mollenhorst et al. (2014).

For each person listed (i.e., an *alter*), participants then reported the approximate age, sex, geographic distance, and relationship with the participant from a list of options: romantic partner, spouse, father/step-father, mother/step-mother, child/ step-child, sibling (e.g., brother or sister), grandparent, best friend, friend, neighbor, workmate, other family tie (e.g., cousin, uncle, aunt), and other.

For each alter, participants were then asked to identify the frequency of communication for eight interpersonal media (i.e., voice call, video chat, email, texting or DM, person-to-person media sharing, social media engagement, online groups, online gaming) and FtF. Please see Appendix A in supplemental materials for examples provided to participants for each modality. This list was developed in consultation with past typologies of distinct communication modalities, especially those using theory of the niche, with the goal of being as discrete yet exhaustive as possible (Boase et al., 2006; Eden & Veksler, 2016; Kim et al., 2007; Ramirez et al., 2008; Ruppel et al., 2018; Tillema et al., 2010; Yang et al., 2014). For each alter and each

modality, participants responded using the following ordinal scale: 9 = several times a day, 8 = daily, 7 = few times a week, 6 = weekly, 5 = every other week, 4 = once a month, 3 = a few times a year, 2 = once in the last year, 1 = never. This scale was pilot tested and revised with the assistance of undergraduate research assistants.

To measure social need fulfillment, participants were asked to evaluate all eight interpersonal media and FtF communication based upon the degree to each is good for “relaxed and casual interaction (e.g., hanging out, checking in)”; “meaningful and personal interaction (e.g., important or intimate matters)”; “efficient or instrumental interactions (e.g., share information, make plans)” on a 5-point scale: 5 = All of the time, 4 = Often, 3 = Occasionally, 2 = Rarely, 1 = Never.

RESULTS

Among the final sample, 91.5% of the sample indicated that they had at least one person with whom they discuss important matters. Participants had an average of 2.36 individuals who they could discuss important matters with ($mdn = 2$, $mode = 1$). Additionally, 31.4% of participants indicated that they had at least one additional person who was especially significant, but they did not discuss important matters with. Participants had less than one additional member of their *core* network ($M = .65$, $mdn = 0$, $mode = 0$). Some participants (26.7%) indicated they had someone with whom they have regular and meaningful interactions they had not mentioned before. Participants had less than one additional member of their *interaction* network ($M = .51$, $mdn = 0$, $mode = 0$). Finally, 30.5% of participants indicated they had someone in their *help* network not mentioned before. Participants had less than one additional member of their help network ($M = .48$, $mdn = 0$, $mode = 0$). In total, participants had an average of 4.00 members of their sympathy group (range 0-16, $SD = 3.17$, $mdn = 3$, $mode = 3$). One hundred and eleven

respondents (5.9%) had no one in their sympathy group.

Of the participants naming at least one alter ($n = 1,758$), the alters ($n = 7,471$) were 50.2% female, 48.3% male, and 1.5% identifying as trans-gender, non-binary, or an “other” gender. Participants estimated alters’ ages as less than 12 yrs. (2.4%), 13-18 yrs. (4.4%), 19-24 yrs. (8.5%), 25-30 yrs. (11.9%), 31-40 yrs. (17.5%), 41-50 yrs. (15.3%), 51-60 yrs. (15.6%), 61-70 yrs. (13.4%), 71-80 yrs. (7.7%), 80+ yrs. (3.3%). Participants reported 21.8% of alters lived with them, and 12.1% lived in the neighborhood and 25.9% in the same town/city as the participant. Many alters lived further away: same state but not same town/city (21.0%), different state (15.6%), and in different country (2.9%).

Alters were most commonly best friends (11.5%) and friends (23.8%). Romantic partners (5.0%) and spouses (9.5%) were common, as were children or step-children of the alters (11.0%) and (step) fathers (4.6%) and (step) mothers (6.9%) of the alters. Other family members were listed: siblings (10.8%), other family (5.9%), and grandparents (1.6%). Workmates (3.7%) and neighbors (3.4%) were listed infrequently. The “other” response option was selected for 2.1% of alters. The open-ended responses often included in-laws (i.e., mother-in-law, sister-in-law), ex-spouses or romantic partners, and health professionals (e.g., therapist, doctor).

For participants who had at least one alter ($N = 1,758$), voice calls were the most commonly used modality with alters (92.8% of alters) followed by FtF interaction (91.5% of alters) and texting or DM (83.5% of alters). However, 100% of participants communicated with at least one alter via voice calls and FtF, and 89.1% of participants communicated with at least one alter via text or DM. The next four interpersonal media were less frequently used: 63.5% of alters were engaged with or followed on social media, 58.6% of alters corresponded through email, and 53.7% alters used video chat. The percent of participants who communicated with at

least one alter using these media were as follows: email (70.3%), social media (71.4%), and video chat (62.9%). Finally, 43.5% of alters communicated using person-to-person media sharing, 39.9% of alters communicated using online groups or communities, and 29.7% of alters communicated through online gaming. The percent of participants who communicated with at least one alter using these media were as follows: person-to-person media sharing (45.3%), online community or social media group (42.0%), and online gaming (32.7%).

RQ1: Modality use and relationship partner

The frequency of modality usage for the eight interpersonal media were treated as antecedent variables and the partner identity was the dependent variable in eight separate binomial logistic regressions. Alters identified with the “other” relationship category were not included. This analysis revealed the degree to which the frequency of modality use is associated with a partner type (Table 1). In other words, simultaneously considering all eight interpersonal media, how likely is the respondent communicating with a specific partner type? Table 2 reports the results with 99% bootstrapped confidence intervals. Voice calls and texting were more likely between romantic partners. When participants communicated with their parents, they were more likely to make voice calls and less likely to use social media, email, and online games. By contrast, when participants communicated with their children, they were more likely to make voice calls and write emails and less likely to use person-to-person media sharing. Sibling and extended family communication patterns were less predictable based on modality usage. To reach friends, social media was used more often and email and voice calls were used less often. Workmates engaged via online groups and email, and were less likely to communicate through social media or voice calls. Finally, neighbors were more likely to use online games and less likely to text.

RQ2: Comparing modalities and social needs

The second research question compared three social need gratifications: relaxed and casual interaction, meaningful interaction, and efficient interaction. Because all participants ($N = 1,869$) evaluated each of the nine options, including FtF, three repeated measures ANOVAs were conducted to compare need satisfaction. Results for relaxed and casual conversation demonstrated significant differences between modalities by Wilks' Lambda = .44, $F(8) = 291$, $p < .001$, partial $\eta^2 = .56$. Figure 1 presents the estimated marginal means for relaxed and casual interaction need satisfaction for each modality with 99% confidence intervals. Post hoc tests of within-subjects contrast suggest that each modality was significantly different from the two adjacent modalities ($p < .05$). A linear trend effect explained most of the variance in modality ratings (partial $\eta^2 = .54$).

Results for meaningful conversation demonstrated significant differences between modalities by Wilks' Lambda = .44, $F(8) = 302$, $p < .001$, partial $\eta^2 = .57$. Figure 2 presents the estimated marginal means for meaningful interaction need satisfaction for each modality with 99% confidence intervals. Post hoc tests of within-subjects contrast suggest that each modality was significantly different from the adjacent modalities ($p < .05$). A linear trend effect explained most of the variance in modality ratings (partial $\eta^2 = .55$).

Results for efficient interaction demonstrated significant differences between modalities by Wilks' Lambda = .45, $F(8) = 281$, $p < .001$, partial $\eta^2 = .55$. Figure 3 presents the estimated marginal means for efficient interaction need satisfaction for each modality with 99% confidence intervals. Post hoc tests of within-subjects contrast suggest that each modality was significantly different from the adjacent modalities ($p < .05$). A linear trend effect explained most of the variance in modality ratings (partial $\eta^2 = .52$).

Taken together, these results suggest that the modalities were judged to be significantly different from one another in terms of all three need fulfillment, and that these patterns of more social-need-fulfilling media were quite similar the three needs.

RQ3: Need fulfillment and modality use

The prior comparison of means found that across all modalities and all three needs, there were significant differences in perceptions of need fulfillment. The final analyses linked the frequency of use of each modality with the perception of the need fulfillment. In other words, does the perception that a modality fulfills a need inform its frequency of use?

To answer this question, all eight interpersonal media were investigated using multi-level modeling (MLM) in Mplus (Muthen & Muthen, 2012-2015). The MLMs controlled for participant characteristics and characteristics of the alters. Furthermore, each model was estimated including only participants who reported having at least some experience with the modality in their sympathy group. For example, if a participant had five alters and if the participant communicated using online games with at least one alter, the participant was included in the online games analysis. If a participant responded with “never” across all alters for that modality, they were not included in the analyses. Table 2 shows the results of eight MLMs. Results suggest that after controlling for the variance in modality usage accountable to participant and alter characteristics, the degree to which that interpersonal media fulfilled at least one of three needs predicted frequency of use for all eight media, but there was variation between needs. Meaningful conversation was significantly associated with use for all modalities. Efficiency (e.g., text, social media, person-to-person, online games) and casual conversation (i.e., voice call, social media, email) were associated with the use of some but not all modalities.

DISCUSSION

The present investigation documented the characteristics of American's sympathy groups as well as the frequency of communication among them across eight interpersonal media and FtF interaction. The results demonstrate that Americans identified an average of four members of their sympathy group (out of 16 possible). Close partners were primarily immediate family and friends. To communicate with these important others, Americans favored voice calls, text messaging, and FtF communication. These three forms of communication are also the oldest modalities of communication (not including email) among those evaluated in the present investigation. Participants perceived these three ways of communicating as possessing the widest niche breadth on three dimensions of social needs (i.e., casual conversation, meaningful talk, efficient communication). Thus, they are not only the most preferred and most frequent modes of communication among most people's sympathy group, they are also perceived to be the most need-satisfying forms of communication.

The investigation also extended the theory of the niche by demonstrating that access to a relationship partner can be considered a component of a niche's competitive superiority. As articulated in other approaches (e.g., Kim et al., 2007), the present manuscript also offers evidence that certain modalities are more likely to be used to communicate with particular relational partner types. The frequency of modality use was significantly associated with the perception of all eight interpersonal media can fulfill at least one social need. This could be interpreted as either a challenge to or an extension of the theory of the niche, which will be discussed further below.

Niche Breadth, Overlap, and Competitive Superiority

Niche breadth is conceived of as the degree to which a medium of communication is more or less able to meet the needs of its users, while niche overlap is the degree of similarity between media in meeting social needs (Dimmick et al., 2000; Ramirez et al., 2008). One medium has competitive superiority when it is more capable of meeting needs in comparison to others. The results suggests that FtF communication has greater breadth, less overlap, and greater competitive superiority compared to all interpersonal media. This finding confirms an observation by Walther (2011), who suggests that including FtF communication as a point of comparison better illustrates distinctions and similarities among communication choices. Furthermore, despite the growing adoption and use of new media, Americans still rely upon and favor FtF interaction to maintain their most important relationships (Eden & Veksler, 2016; Hall, 2020; Vlahovic et al., 2012). Indeed, FtF communication was seen as more capable of meeting needs of casual interaction, meaningful conversation, and efficient communication. This suggests that FtF communication – as a niche – has extremely high breadth.

The next two most frequently used modalities – voice calls and texting – were the second most capable of meeting social needs and used very often (100% of participants used voice calls and 89% used texting to communicate with their sympathy group). The present investigation suggests that the basic functionality of mobile communication – voice calls and texting - have become essential components of Americans' ability to keep in touch with the most important individuals in their lives, pointing to the ongoing integration of offline and online communication (Hall, 2020). As Ramirez et al. (2008) predicted, the basic functions of mobile telephony allow users to satisfy a large variety of social needs. Along with FtF communication,

these two modalities demonstrated a considerable degree of competitive superiority for meeting the three needs explored here.

When contrasted against each other, the other modalities had more defined media niches. Video calls were seen as more likely to be able to fill the needs of meaningful talk as well as casual conversation, while email was perceived as being more useful for efficient communication, which confirms the results reported by Dimmick et al. (2000) over 20 years ago. Person-to-person media and social media showed considerable niche overlap for all three needs. Both modes of communication are forms of social media, varying by degree of audience reach and reliance on video images. Herein, participants viewed each below the grand mean ability to meet needs, but person-to-person media, potentially because it is a more directed and lower reach form of communication (Hall, 2020), was evaluated as more able to meet social needs than was engaging or following a close relationship partner on social media. Finally, when compared to one another, online gaming was more fulfilling of the need for relaxed and casual interaction and online groups were more efficient. Yet, these final two were significantly below the need satisfaction of all other interpersonal media.

Similar to the findings of Raine and Wellman (2012), these results suggest that global trends in new media adoption may obscure lagging patterns of interpersonal media use. In 2000, less than 40% of American households had access to the internet at home, and only 21% of American adults exchanged emails each day. In the present study, at least 30% of participants *never* used email, social media, or video chat to communicate with their sympathy group. Additionally, at least 55% of participants *never* used online communities, online games, and person-to-person media sharing to communicate with their sympathy group. Instead, basic mobile phone (not smart phone) functionality – texting and voice calls – were the most

commonly used, the most familiar, and the most satisfying interpersonal media. In this vein, this study reveals that the seeming ubiquity of new forms of mediated communication has not yet translated to universal adoption of these potential forms of communication for the purposes of relational maintenance among Americans' sympathy groups.

Competitive Superiority and Relationship Partner Access

This investigation argued that competitive superiority can be tied to access to specific relationship partners. This extends past work exploring how relationship partners influence niche creation (Dimmick et al., 2011; Ramirez et al., 2008), and further develops perspectives informed by the social construction of technology (e.g., Baym et al., 2004) as well as the media matching principle (Hall, 2020). The results reported here suggest that when compared against the other seven interpersonal media, most modalities offered access to a distinct set of relationship partners. In other words, some modalities were competitively superior to others because of the access they afforded to close others. Furthermore, the results offered mixed support for arguments derived from the electronic layers of intimacy (Liu & Yang, 2016; Yang et al., 2014). For example, similar to Yang et al. (2014) voice calls were reserved for romantic partners but not as much for friends, but the present investigation also demonstrated that voice calls were also used to connect parents to children and children to parents (supporting Hall and Woszidlo, 2021). Also supporting Yang et al. (2014), social media were used among friends (and not between children and parents), while online gaming afforded access to other types of relationship (Liu & Yang, 2016), which were neighbors in this investigation.

The results, however, offered further nuance. Findings suggest the “layer of intimacy” for video chat and person-to-person video sharing were undifferentiated among relationship partners, which suggests their patterns of use are not yet established and thus do not offer a

competitive advantage to close relationship partners broadly (although they may provide access to others outside of the sympathy group). Additionally, email was a means of reaching one's children and workmates, but not friends or one's parents, and online groups unite individuals to their important neighbors and workmates. As in other studies (e.g., Ledbetter et al., 2016; Ruppel et al., 2018) relationship types were not uniform in their preference of media, yet the present research suggests that access to important others influences patterns of interpersonal media use and this access creates a competitive advantage for certain interpersonal media over others.

Furthermore, social need fulfillment is important, but patterns of use may be driven by other factors in the relationships. For example, frequency of text/DM was negatively associated with being a core (vs. discussion network member, but positively associated with text/DM being good for meaningful and efficient conversations. This suggest there are characteristics of relationships that may provide more clarity of when and why they are used (Ledbetter et al., 2016).

Gratifications and Uses

This study demonstrated the link between the frequency of modality use and perception of need gratification. These findings both extend and present a challenge for the theory of the niche. Extending the theory of the niche, the results demonstrate that there is a consistent association across all interpersonal media between the perception of need fulfilment and frequency of use – confirming a fundamental tenet of the theory (Dimmick et al., 2000). The results also provide some evidence that can be taken in support of past research on what makes a niche a niche. For example, frequent texts and DMs, social media use, and person-to-person media sharing are all associated with assessments of the modality's ability to meet the need for efficient communication. This suggests that the three show have niche overlap. Indeed, all three

are ways of using social media broadly defined. The need for relaxed and casual interaction was fulfilled by a variety of modalities: FtF, phone calls, social media, and, rather unexpectedly, email. This intriguing set of results, however, challenges what it means to engage in relaxed and casual interaction from the perspective of participants— given that voice calls, email correspondence, and social media are qualitatively very different from each other.

This leads to the biggest challenge to the theory of the niche. Specifically, a modality's ability to meet social needs is associated with a participant's frequency of use, but it is also likely that greater use makes it more likely to fill needs. This means for any given sample of participants, the least used media are also likely to be rated as less need fulfilling— a finding supported by contrasting the between modality mean comparisons and the MLM results. In other words, need fulfillment is conflated with use in a way that makes it difficult to make claims that a popular medium fulfills needs more than an unpopular one. Consider the MLM analyses, which only included people who had at least some familiarity with that media. Therein, *all* eight interpersonal media were more frequently used when they were perceived as meeting the need of meaningful conversation. Whether it was email, person-to-person media sharing, voice calls, or online gaming, when participants perceived the modality could meet the need of meaningful talk, they used it *more* to maintain their important relationships. Although some modalities are not interchangeable or substitutable for certain social needs (Dimmick et al., 2000), the present investigation suggests they are uniformly more frequently used when it comes to meaningful talk among intimates. How is this possible?

One interpretation could consider the insights of channel expansion theory (Carlson & Zmud, 1999; Vlahovic et al., 2012). As an extension of insights of social information processing theory (Walther, 2011), channel expansion theory suggests that people can modify and shape

their media experience when they are familiar with the modality and close to their partner (D'Urso & Rains, 2008). Drawing from the theory, Vlahovic et al. (2012) found that people can have humorous and enjoyable interactions with close others no matter the modality. For generations, long-distance romantic and familial relationships have had to keep close and connected using lean and asynchronous forms of communication, like letters or even mailed cassette tapes (Hall & Wozidlo, 2021). The results herein could be interpreted to suggest that theory of the niche may have underestimated the degree to which people can essentially “make do” with media they are familiar with (Hall, 2020). In other words, absent cues are filtered in, no matter the media (Baym et al., 2004). The degree of social need satisfaction, like channel richness, may be strongly influenced by frequency of use and partner familiarity. This calls into question whether any medium can be said to occupy a niche for all users, rather than for the users most familiar with it. Instead, this study suggests that, *no matter the interpersonal media*, people can adapt and modify it to satisfy their need for meaningful conversation with their close relationship partners. Although this may challenge the concept that channels are in competition with one another, it is consistent with the idea that a niche is both a product of technical features and patterns of use.

Limitations

The first limitation resides in variable measurement. Communication frequency was measured using a single-item ordinal measure, which is consistent with past research (e.g., Tillema et al., 2010). The degree to which needs were fulfilled also employed single item scales. Thus, reliability could not be assessed for either measure. Because there were nine options and three needs evaluated, it was important to balance measurement reliability with respondent

burden, especially because name generation tasks are already considered burdensome. The limitations (e.g., reliability) of these measures must be weighed against such challenges.

An additional limitation of the present investigation is the exploration of only three social needs. Although this advances theory of the niche and responds to calls of past research (e.g., Ruppel et al., 2018), there is no agreement on the number of needs in theory of the niche, even within the specific domain of social needs. If other uses of media were to be brought under the umbrella of niche research, such as entertainment, shopping, politics, or news, the complete documentation of needs fulfilled by media could be enormous. The present focus was in dialogue with past social niche research as well as discrete functions of communication. Yet, a comprehensive investigation of what constitutes a social need and how to measure it from the perspective of theory of the niche is essential for the future development of the theory of the niche.

Although a secondary goal, the present investigation failed to identify participants' sympathy group (Dunbar, 2021), which is theoretically thought to be between 12 and 15 individuals. On the other hand, this study provides clear support for Hampton et al. (2011), who found that a discussion plus core name generator can identify an average of three alters in respondents' core networks (Hampton et al. = 2.86, this study = 3.01). The results demonstrate that the number of unique alters can be increased by adding two additional name generator tasks. Yet, the theoretical size of a sympathy group -- 12 to 15 individuals -- was not confirmed using these methods. There are several possible reasons for this disconnect. Other studies attempting to document the size of people's core network have found it challenging to prompt individuals to generate more than five names (e.g., Marsden, 1987). Alters who are likely to be overlooked or forgotten beyond the first five are also alters who weren't that close to the participant to begin

with. Although the present investigation is not in a position to offer a definitive answer, it raises the question, if 12-15 names cannot be generated with four name generation tasks, then is this a meaningful or realistic approximation of the size of one's sympathy group? Although the present investigation confirms the size of American's core group of intimates (Hampton et al., 2011), it suggests most people may not have a sympathy group.

Conclusions

Although American adults can choose from an increasingly broad range of media to keep in touch with their closest friends and family, they continue both prefer and positively evaluate voice calls and texting, which are information technologies that have been available for more than 20 years. Against the backdrop of these general preferences, people match their media choices to their relationships: voice calls with parents and partners, social media among friends, and online groups with neighbors and workmates. Yet, no matter the interpersonal media they choose – from voice calls and texts to online games and email – as people more rely on a channel to communicate with their closest friends and family, they are more likely to believe it is a place for meaningful conversations. Although Americans undoubtedly have interpersonal media preferences, they are also able to use any technology to socially connect to the people they care for the most.

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Figure One

Estimated Marginal Means of Relaxed and Casual Conversation

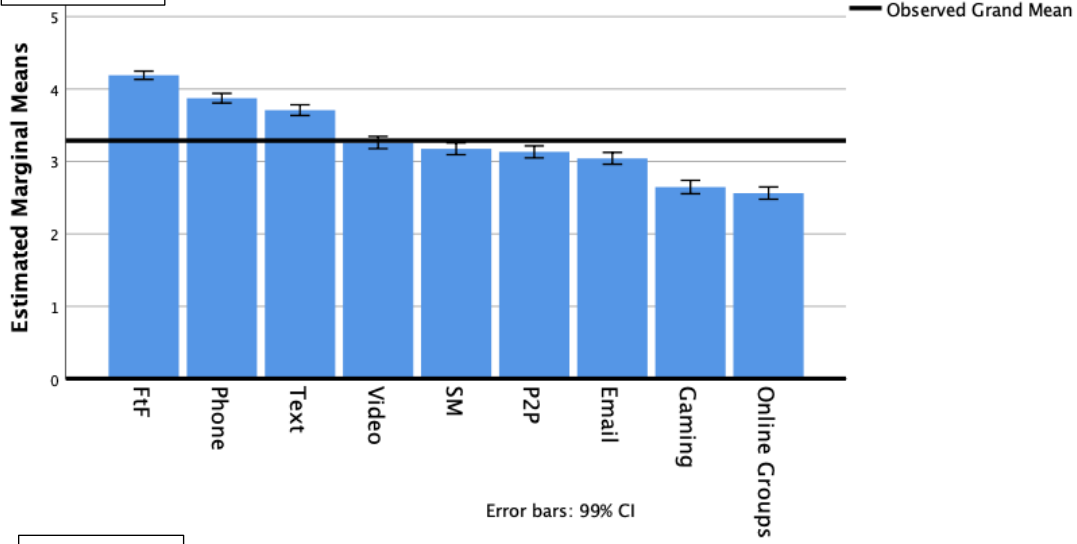


Figure Two

Estimated Marginal Means for Meaningful Conversation

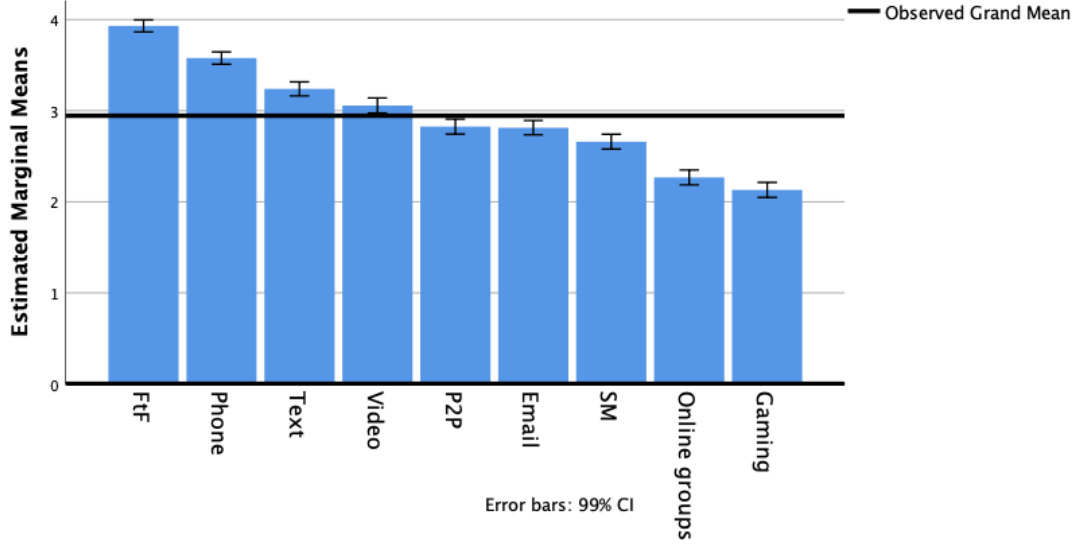


Figure Three

Estimated Marginal Means of Efficient

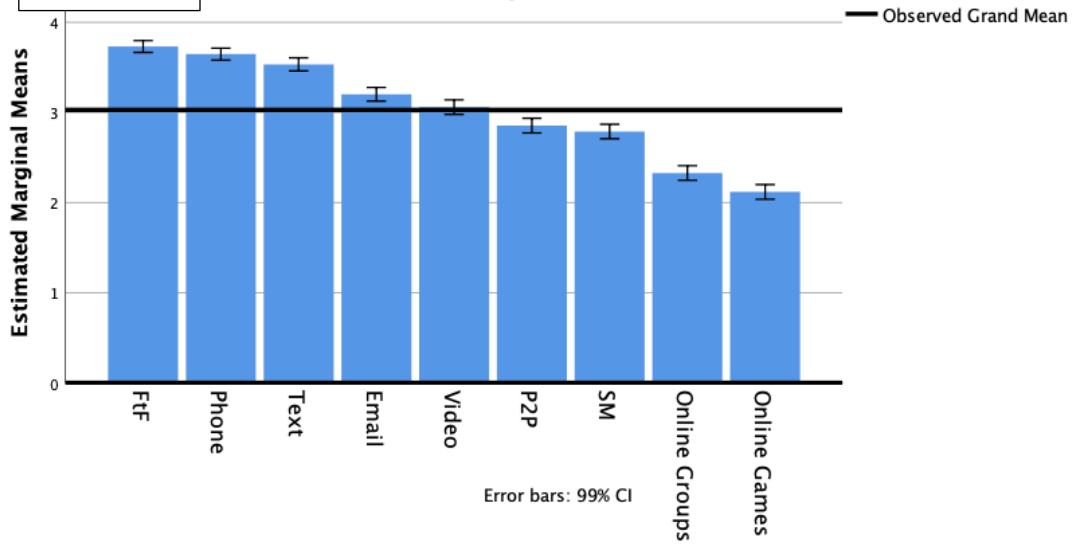


Table 1:

Median Modality Frequency by Relationship Partner Type

	<u>Romantic Partner</u>	<u>(Step) Parent</u>	<u>(Step) Child</u>	<u>Sibling</u>	<u>Extended Family</u>	<u>Friend</u>	<u>Neighbor/ Workmate</u>
Face-to-Face	Daily	Weekly	Weekly	Biweekly	Biweekly	Biweekly	Biweekly
Voice Call	Few times/wk	Weekly	Weekly	Weekly	Biweekly	Biweekly	Biweekly
Text or DM	Few times/wk	Weekly	Weekly	Biweekly	Biweekly	Biweekly	Biweekly
Engage on SM	Biweekly	1/mth	1/mth	1/mth	1/mth	1/mth	1/mth
Video Chat	1/mth	1/mth	1/mth	Few times/yr	Few times/yr	Few times/yr	1/mth
Email	1/mth	Few times/yr	1/mth	Few times/yr	Few times/yr	Few times/yr	1/mth
Person-to-Person	1/mth	Few times/yr	Few times/yr	Few times/yr	Few times/yr	Few times/yr	Few times/yr
Online Group	Few times/yr	Few times/yr	Few times/yr	Few times/yr	Few times/yr	Few times/yr	Few times/yr
Online Games	Few times/yr	Few times/yr	Few times/yr	1/yr	1/yr	1/yr	Few times/yr

Notes: Romantic partner includes spouses and romantic partners, parents include (step)mothers and (step) fathers, extended family includes grandparents and extended family, and friends includes best friends. Scale range: “Several times a day” to “not in the past year”; Biweekly = Every other week; 1/mth = once per month; 1/yr = once per year

Table 2

MLM Logistic Regression Results of Modality Frequency Predicting Partner Type ($N = 1,758, n = 7,471$)

	<u>Romantic Partner</u> 99% CI Exp(B)		<u>(Step) Parent</u> 99% CI Exp(B)		<u>(Step) Child</u> 99% CI Exp(B)		<u>Sibling</u> 99% CI Exp(B)		<u>Extended Family</u> 99% CI Exp(B)		<u>Friend</u> 99% CI Exp(B)		<u>Workmate</u> 99% CI Exp(B)		<u>Neighbor</u> 99% CI Exp(B)	
Voice Call	1.30	1.37*	1.10	1.16*	1.07	1.14*	.98	1.05	.90	.98	.76	.82*	.70	.86*	.88	1.01
Text or DM	1.06	1.15*	.93	.99	1.01	1.08	.94	1.01	.86	.95*	.99	1.04	.93	1.04	.74	.88*
Engage on SM	.97	1.04	.89	.96*	.97	1.04	.97	1.04	.98	1.06	1.03	1.08*	.81	.94*	.86	1.00
Video Chat	.92	.98	1.08	1.01	.97	1.04	.97	1.05	1.00	1.05	.96	1.01	.94	1.07	.93	1.01
Email	1.01	1.06	.90	.97*	1.04	1.10*	.94	1.01	.92	.99	.93	.98*	1.17	1.26*	.96	1.08
Person-to-Person	.99	1.05	.99	1.05	.82	.91*	.96	1.04	.92	1.02	1.02	1.05	.97	1.09	.93	1.07
Online Group	.90	.97*	1.01	1.08	.92	1.01	.94	1.04	.96	1.06	.97	1.03	1.04	1.16*	1.02	1.15*
Online Games	.99	1.05	.87	.96*	.99	1.08	.90	.98	.96	1.05	.98	1.02	.95	1.08	1.08	1.15*
R-squared	.06	.10	.02	.03	.02	.03	.00	.01	.01	.02	.04	.06	.02	.08	.01	.05

Notes: * $p < .001$; R-squared first Cox & Snell and second Nagelkerke; Romantic partner includes spouses and romantic partners, parents include (step)mothers and (step) fathers, extended family includes grandparents and extended family, and friends includes best friends.

Table 3

Unstandardized Estimates for the MLMs of Participant and Alter Characteristics and Social Needs Predicting Modality Use Frequency (N = 1,758, n = 7,471)

	Voice Call	Text/DM	Social Media	Email	Video Chat	Person2Person	Online Comm.	Online Games
Level 1								
Alter Age	-.002 (.013)	-.167 (.014)*	-.222 (.016)*	-.047 (.002)*	-.152 (.016)*	-.233 (.020)*	-.106 (.020)*	-.223 (.023)*
Alter Male	-.130 (.043)*	-.240 (.049)*	-.523 (.056)*	-.151 (.050)*	-.250 (.054)*	-.361 (.068)*	-.043 (.066)	.373 (.075)*
Alter Other Sex	-.510 (.182)	-.813 (.207)*	-.070 (.227)	-.329 (.204)	-.050 (.211)	-.299 (.232)	-.427 (.223)	.297 (.288)
Live w/ Alter	.850 (.055)*	.365 (.063)*	.008 (.073)	.188 (.067)	.083 (.070)	.305 (.085)*	.021 (.086)	.436 (.096)*
Core	-.742 (.060)*	-.947 (.068)*	-.635 (.078)*	-.645 (.068)*	-.379 (.074)*	-.735 (.091)*	-.459 (.088)*	-.303 (.098)*
Interaction	-.838 (.069)*	-.857 (.078)*	-.485 (.090)*	-.300 (.078)*	-.555 (.085)*	-.686 (.105)*	-.237 (.104)	-.262 (.113)
Help	-.886 (.067)*	-.090 (.076)*	-.701 (.088)*	-.498 (.077)*	-.392 (.084)*	-.916 (.105)*	-.468 (.103)*	-.158 (.115)
Random effects								
Residual	2.646 (.049)	3.347 (.063)	3.722 (.077)	2.824 (.059)	3.095 (.067)	3.535 (.089)	3.114 (.082)	3.171 (.092)
Level 2								
Participant								
Age	-.014 (.003)*	-.026 (.003)*	-.016 (.004)*	-.010 (.004)	.039 (.005)*	-.023 (.006)*	-.021 (.006)*	-.002 (.007)
Male	.110 (.086)	.084 (.086)	.427 (.105)*	.490 (.109)*	.567 (.125)*	.184 (.140)	.519 (.148)*	.062 (.182)
Other Sex	-.971 (.565)	-.016 (.548)	-.182 (.643)	-.022 (.733)	.153 (.678)	.848 (.684)	2.255 (.923)	2.585 (.978)*
Latinx = 1	-.013 (.306)	-.224 (.311)	-.217 (.367)	.112 (.417)	-.367 (.409)	.395 (.453)	-1.472 (.482)*	-.370 (.536)
Black	.430 (.145)*	-.259 (.143)	-.224 (.168)	.177 (.188)	.250 (.190)	-.128 (.200)	-.315 (.224)	-.290 (.265)
Asian Ame.	.280 (.172)	-.068 (.164)	.112 (.196)	.260 (.207)	.331 (.213)	.367 (.230)	.533 (.256)	-.367 (.269)
Native Ame.	.658 (.418)	.164 (.395)	.397 (.519)	-.425 (.516)	.315 (.567)	.541 (.594)	.786 (.663)	.807 (.758)
Multiracial	-.181 (.312)	.138 (.301)	-.621 (.356)	-.771 (.439)	1.082 (.414)	-.309 (.427)	-1.473 (.482)*	-.512 (.536)
Other race	.201 (.324)	.319 (.331)	.072 (.401)	.082 (.448)	.423 (.434)	-.412 (.485)	.094 (.532)	.257 (.584)
Education	-.064 (.025)	.018 (.025)	-.018 (.030)	.011 (.031)	-.024 (.036)	-.009 (.042)	-.042 (.043)	.016 (.054)

Income	.013 (.015)	.027 (.015)	.008 (.018)	.038 (.019)	-.032 (.022)	.025 (.023)	.019 (.025)	.039 (.030)
Employed =1	.350 (.103)*	.315 (.102)*	.263 (.125)	.272 (.134)	.510 (.150)*	.037 (.170)	.280 (.188)	.174 (.236)
Dating	.331 (.169)	.499 (.163)*	.166 (.191)	.306 (.229)	-.039 (.229)	.179 (.234)	-.057 (.276)	.416 (.324)
Married/Eng.	.707 (.125)*	.551 (.123)*	.500 (.149)*	.598 (.162)*	1.033 (.174)*	.731 (.189)*	.503 (.207)	.524 (.245)
Div/Wid/Sep	.349 (.145)	.422 (.148)*	.041 (.188)	.046 (.190)	.312 (.233)	-.188 (.293)	-.151 (.295)	-.317 (.445)
Live alone = 1	.323 (.114)*	.035 (.114)	.040 (.138)	.608 (.147)*	.520 (.165)*	.523 (.177)*	.194 (.186)	.624 (.217)*
Need: Casual	.200 (.051)*	.114 (.046)	.141 (.043)*	.409 (.052)*	.132 (.066)	.137 (.067)	.141 (.075)	-.067 (.076)
Need: Meaning	.176 (.050)*	.212 (.041)*	.300 (.054)*	.409 (.055)*	.369 (.071)*	.228 (.074)*	.472 (.077)*	.491 (.086)*
Need: Efficient	.029 (.048)	.127 (.046)*	.181 (.054)*	-.095 (.054)	.063 (.070)	.312 (.070)*	.131 (.073)	.344 (.082)*
Fixed Effects								
Intercept	4.619 (.263)	6.084 (.283)	3.722 (.077)	1.851 (.315)	4.488 (.353)	4.947 (.371)	3.623 (.407)	2.562 (.493)
Random effects								
Residual	2.035 (.099)	1.548 (.088)	1.898 (.116)	2.394 (.131)	2.811 (.157)	2.198 (.157)	2.407 (.170)	2.793 (.207)
Goodness-of-fit								
AIC	30848	30015	25671	24426	23075	17102	15558	12646
BIC	31049	30214	25864	24619	23266	17284	15738	12819
<i>N</i> alter	7471	7007	5833	5818	5369	3909	3634	2933
<i>N</i> participant	1758	1567	1255	1236	1106	797	738	574

Notes: $p < .001$; Reference group for alter (Level 1) is female, living outside of house, and member of discussion network. Reference group for participant (Level 2) is female, non-Latinx, white, currently not employed, single (not dating), and live with other people

Data screening procedures

The survey started with four name generation tasks to identify members of participants' sympathy group. This method required participants ($N = 2,008$) to fill in the first name or initials of their discussion partners, core network, interaction partners, and sources of instrumental aid. Participants' responses were screened for suspicious responses and bot detection. Participants were deleted listwise if *all* of the names they generated met any of the following conditions: listing numbers instead of names, famous people's name or homophones of them (e.g., Jo Byden), repeated words instead of names (e.g., like, like, like; yes, yes, yes), and repeated sequences instead of names (e.g., mr, mrs, ms; good, better, best; x, y, z). Participants were flagged, but not deleted, if it was unclear if they met the above criteria. This flagging was used in conjunction with the next set of criteria to further check data quality.

Participants began each name generation task by answering a yes/no question about having four types of relational partners (see measures below). If they indicated "yes" but then left the open-ended boxes blank or wrote "no", "N/A", or "none" and provided no other information about this person, their "yes" response was reverted to a "no." However, such participants were flagged if they responded to two or more (out of four) name generation tasks in this inconsistent fashion. Finally, participants were flagged if they completed the survey in three standard deviations below the mean completion time, or if they responded with the same, non-midpoint response to two items that were positively and negatively worded from the same scale. Participants with two or more flagged responses were deleted listwise ($n = 139$).

Appendix A

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|---|---|
| 1. Voice calls | Examples: Mobile phone or landline, Using any audio feature of social media (WhatsApp, Facebook Messenger) or program (Skype (audio)) |
| 2. Video calls | Examples: Skype, FaceTime, Zoom, Google Hangout, Snapchat (video chat), Houseparty |
| 3. Email | Examples: Gmail, Yahoo, work email |
| 4. Texting or Direct Message | Examples: Texting on mobile device, Direct Message on social media (Facebook message), and apps (GroupMe, WhatsApp) |
| 5. See or engage with them through social media (Facebook, Instagram, Pinterest, Twitter) | Examples: Including 'like,' comment on posts or pictures, following, watching on social media |
| 6. Person-to-person media sharing | Examples: Snapchat, TikTok, sending memes |
| 7. Online gaming | Examples: Xbox, PlayStation, and messages sent through mobile apps (e.g., Words with friends) |
| 8. Engage with or interact on message boards/online communities | Reddit, Group Chat, Facebook groups |