Measurement: Interdisciplinary Research and Perspectives

ISSN: 1536-6367 (Print) 1536-6359 (Online) Journal homepage: www.tandfonline.com/journals/hmes20

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James B. Stein & Cassidy Creer

To cite this article: James B. Stein & Cassidy Creer (14 May 2026): Conceptualizing and Operationalizing the Dyad-Network Accommodation Phenomenon, Measurement: Interdisciplinary Research and Perspectives, DOI: 10.1080/15366367.2026.2673526

To link to this article: https://doi.org/10.1080/15366367.2026.2673526

Published online: 14 May 2026.

MEASUREMENT: INTERDISCIPLINARY RESEARCH AND PERSPECTIVES
https://doi.org/10.1080/15366367.2026.2673526

Conceptualizing and Operationalizing the Dyad-Network Accommodation Phenomenon

James B. Stein[a] and Cassidy Creer[b]

[a]Department of Communication, Utah Tech University; [b]Department of Sociology, San Diego State University

ABSTRACT

Recent work has explored dyad-network communication as a contributing factor in relationship development and outcomes. The present study is the first to operationalize dyad-network communication. Specifically, we move toward a measure of dyad-network communication. In Study 1, open-ended responses were collected from 80 couples ($N = 160$) regarding the methods through which they converge and/or diverge when discussing or in the presence of their respective social networks – as well as how those networks accommodate to them. These responses were used to develop an 18-item Likert-style scale, comprised of three subscales. Study 2 involved three waves of data collection. An exploratory factor analysis was performed on the first wave, narrowing the total items down to 14. The second wave was subjected to confirmatory factor analysis and bivariate correlation as an initial test of convergent/divergent validity. The third wave involved advanced regression analyses as further tests of construct validity. Results are discussed in terms of measurement use as well as the theoretical salience of dyad-network communication as a measured variable.

KEYWORDS

Scale development; interpersonal communication; romantic relationships; social networks

Extant research has clarified how social network members surrounding a romantic relationship can alter relational development (Bernhold & Giles, 2020; So et al., 2022; Sprecher, 2011). Stein et al. (2020) noted that romantic partners face various uncertainties that evolve as their relationships progress. Moreover, Barzeva et al. (2021) illustrated that a couple's relationship development is determined, in part, by how involved or withdrawn they are vis-à-vis each other's networks. Thus, social networks significantly influence romantic relationships.

Far less research has parsed the mechanisms through which such influence occurs. Studies have linked perceptions of network interdependence to negative relational emotions (Stein & Davidson, 2019) and perceptions of network uncertainty to relationship satisfaction and commitment (Stein & Bennett, 2021). That said, the communication mechanisms underlying these relationships have yet to be studied. In other words, existing scholarship has shown that perceptions of and interactions with social network members can alter relational perceptions and behaviors for couples; however, the communication between romantic dyads and their networks(s) remains understudied. An initial conceptualization and measurement of such communication is necessary to explore the specific communication processes through which romantic couples and social networks interact.

Thus, the goal of this project is to provide an initial understanding of the process through which romantic dyads communicate with and/or about their social network(s). Specifically, we aim to extend existing scholarship that has identified accommodating behaviors as a primary mechanism of dyad-

CONTACT James B. Stein James.Stein@UtahTech.edu Department of Communication, Utah Tech University, 225 S University Ave, St. George, UT 84770, USA

Dr. James B. Stein received his PhD in Communication from Arizona State University and is currently an associate professor at Utah Tech University. Cassidy Creer earned a BA in English and Sociology at The university of California, Santa Barbara and will be a Sociology Masters Student at San Diego State as of Fall 2026. Questions and requests should be sent to James.Stein@UtahTech.edu.

network communication (e.g., Stein, 2024; Stein et al., 2022). These efforts are in service of developing a broader theory of dyad-network accommodation. This paper presents a theoretical and ecological rationale for a measure of dyad-network accommodation, followed by its conceptualization and operationalization.

Social networks and romantic relationships

Social network members come in several forms. Friends, family (immediate and distant), peers, coworkers, neighbors, and acquaintances, among others, can comprise someone's social network (Hill & Dunbar, 2003). Sprecher (2011) found that people overwhelmingly identified friends as their primary network members. Broader definitions like "kin" (Parks et al., 1983, p. 119) or hyper-specific methods such as hierarchical mapping technique (Stein & Moliterno, 2022) can be used to define network membership. Finally, network conceptualizations can be categorical (Surra, 1988) or quantitative (Fiori et al., 2017). In sum, the makeup and definition of a person's network is often dynamic and fluid. It is therefore important to understand the ways that couples (and the actors in them) navigate these diverse connections.

Couples' networks emerge across a key bifurcation. Romantic partners have *egocentric networks* (i.e., individuals who belong to a person's singular network) as well as a *duocentric network* (i.e., individuals who belong to a couple's shared network; Kennedy et al., 2015). Methodologically, gauging the influence of egocentric networks on relationship progression and outcomes involves individual self-report (i.e., monadic) data, whereas exploring the impact of a couple's duocentric network requires dyadic data. Moreover, the communication couples enact with/about their networks can differ within this bifurcation (see Kennedy et al., 2015). This distinction is at the forefront of our study's goals and is central to the sway that social networks hold over romantic relationships.

The role of social networks in relationship development

Both classic and contemporary research illustrate how social networks (and their members) aid and/or hinder the development of romantic relationships. Eggert and Parks (1987) demonstrated that adolescents use network-based communication to form romantic relationships. Sprecher and Felmlee (1992) found longitudinal relationships between perceived network support and subsequent reports of love, satisfaction, and commitment in romantic couples. Network members celebrate the end of disapproved relationships (Sprecher & Felmlee, 2000) and actively attempt to disrupt romantic relationships they view negatively (Sprecher, 2011). Thus, social networks are instrumental in the initiation, development, and termination of romantic relationships.

Extant work has specified *who* in networks influence *which* perceptions in romantic relationships. Fiori et al. (2017), along with Kennedy et al. (2023), highlighted the different ways in which duocentric networks form and exist. Specifically, they found that married heterosexual couples are less satisfied when they form network connections centered within the wife's family. Their work, alongside Stein and Moliterno's (2022) hierarchical mapping technique, demonstrates that certain network members hold more sway over relationships than others – specifically immediate family, best friends, and shared network members. Combined, these results articulate some of the ways in which dyad–network interactions change relational dynamics, and suggest a need to understand *how* such changes occur.

The presence of network members may be intimidating or comforting, depending on interactions and perceptions. For example, Stein et al. (2020) denoted specific types of network-based relational uncertainty, linking them to relationship satisfaction (Stein & Bennett, 2021), relational uncertainty (Stein, 2021), and attachment tendencies (Stein et al., 2022). Similarly, network interdependence (i.e., perceptions that network members interfere with or facilitate daily goals; Stein, 2018) can increase negative emotions (Stein & Davidson, 2019), as well as relational talk (So et al., 2022). Thus, not only are network members perceived as influential by couples, the valence of that influence is subject to myriad factors.

Perceptions of network uncertainty and interdependence help clarify how romantic partners view their networks' roles. However, these measures have two limitations. First, they are monadic and therefore do not fully capture the dyadic experience. Second, they are perception-based, not communication-based. This is important for a few reasons. First, broadly, there is the noted difference between experience and expression (see Matsumoto & Kupperbusch, 2001). Second, Barnlund's (2017) transactional model of communication is clear in its articulation that perceptions and communication acts are distinct experiences with distinct outcomes. Third, and related, parsing the trajectory and nature of romantic relationships requires an understanding of both perceptions and actions (in this case, relational communication) within those relationships. The following study used dyadic data to produce a communication-based measure in pursuit of these needs. We chose communication accommodation as a theoretical backdrop for this measure, the reasons for which are articulated below.

Communication accommodation in relationships

Zhang and Giles (2018) provide a summary of communication accommodation theory (CAT). In short, CAT proposes that people adjust aspects of their (non)verbal communication to align with the needs and preferences of their in-groups. Accommodation primarily occurs through *convergence* (communication alteration designed to promote similarity) and *divergence* (communication modification emphasizing distinctiveness). Notably, humans sometimes falter in their accommodation efforts through either *overaccommodation* (converging or diverging in a norm-violating manner) or *nonaccommodation* (failing to converge/diverge enough during an interaction; Elhami, 2020).

Although CAT was originally derived to explore cross-cultural interactions at the interpersonal level (see Giles & Ogay, 2007), it has since evolved to explore dyadic, small group, and mass communication scenarios. For example, Bernhold and Giles (2020) demonstrated that people tend to perceive higher levels of relational closeness when they assess that their partner is accommodating to their egocentric network(s). Zhang and Imamura (2017) showed that intergroup communication can be facilitated (or hindered) through communication accommodation. Recent research supports interpersonal, person-network, and dyad-network communication accommodation.

A key limitation in communication accommodation research is the lack of dyadic reports. For example, Bernhold and Giles (2020) findings were limited to monadic reports. More broadly, measures of communication accommodation remain limited. Imamura et al. (2011) developed a Likert-style scale of communication accommodation for individuals in romantic relationships. Stein (2024) adapted it for reporting on network ties. Again, these measures stem from monadic reports, restricting what we can infer about couples' shared experiences. There is a clear need for dyadic measures of communication accommodation.

Conceptualizing dyad-network accommodation

Communication accommodation has been defined as "the ability to adjust, modify, or regulate one's language use and communication behaviors in response to their conversation partners, initial orientations, self-systems (stereotypes and existing attitudes), in the situation at hand" (Zhang & Giles, 2018, p. 96). This definition carries several assumptions. First, communication accommodation is reactive: people respond to a stimulus (or stimuli) by adjusting their communication. Second, there is an individual onus during the accommodation process. Third, accommodation can occur episodically, relationally, or systemically.

Based on the above definition, *dyad-network accommodation* (DNA) refers to how a couple and/or a network modifies or regulates communication behaviors in response to conversations, relational parameters, and/or contextual constraints. Like communication accommodation, this definition carries several assumptions. First, the dyad-network accommodation process can be individual or dyadic. One partner may accommodate to either egocentric network and/or the duocentric network.

Alternatively, the couple may engage in specific efforts to accommodate on behalf of the relationship, as a dyad, to the needs of the network. This concept has precedent. For example, relational dialectics theory (Baxter, 2004) shows that dialectical tensions can be experienced by an individual in relation to their partner, as well as by that couple vis-à-vis the outside world. Similarly, relational uncertainty (Knobloch & Solomon, 1999) contains elements of the individual (i.e., self/partner uncertainty) and the dyad (i.e., relationship uncertainty). The DNA definition assumes that accommodation has both monadic and dyadic onus.

Second, DNA is both reactive and proactive. Couples, network clusters, or entire networks may choose to avoid certain topics, behaviors, or interactions, and this decision-making process requires explicit conversation. Such accommodation may involve disrupting the couple's intertwining interchain sequences (see Berscheid et al., 1983). It may also require manipulating the intertwining interchain helices shared within their networks (see Stein, 2018). Thus, although DNA can be reactive, it can also be proactive, and relfeclt a shared decision.

Third, DNA is a process rather than an ability. This is in part due to its dyadic onus and proactive nature. The DNA process exists within conversational, relational, or contextual constraints. Topics discussed by couples with certain network members (e.g., politics, religion, sex) may be inappropriate for conversation with others. Thus, couples and network members likely adjust their accommodative reactions on a case-by-case basis and over time. These adjustments occur both within and across interactions.

With a substantive definition and conceptualization of the DNA phenomenon, the next step is operationalization. The two studies below stem from four waves of data collection. The first study involves the dyadic reports of romantic couples in long form to identify specific DNA practices. The second study is a three-wave longitudinal study that uses exploratory factor analysis (EFA, Wave 1), confirmatory factor analysis (CFA, Wave 2), and tests of concurrent validity through bivariate correlation and multiple regression (Waves 2 and 3, respectively).

Study 1

Study 1 aimed to explore specific DNA tactics. Prior work suggests that couples will alter their speech patterns and conversational topics to promote duocentrism and inter-network ingratiation (Bernhold & Giles, 2020). Approving network members are known to facilitate romantic relationship development through their communicative adaptations (Stein & Davidson, 2019). Thus, it is reasonable to ask how, if at all, couples experience the DNA process.

RQ1: In what ways, if any, do couples report that engaging in dyadic convergence and/or divergence when communicating with or about their social networks?

RQ2:In what ways, if any, do couples report that their social networks (or their members) engage in convergence and/or divergence when in their presence?

Methods

Participants and procedures

To probe the first two research questions, data were collected from 80 couples ($N = 160$). Couples were recruited from a medium-sized university in the American Southwest and its surrounding community (Washington County, Utah). Responses were recorded using Qualtrics surveys and stored in an anonymized SPSS file. Participants were entered into a raffle in which one out of every 20 pairs won a $100 cash prize.

Following university IRB approval, couples were invited into a lab to answer a series of open-ended questions about their dyad-network accommodation tactics. Importantly, couples were seated

together and instructed to come to a dyadic consensus when answering prompts. First, couples were asked to create their ego- and duocentric networks together (see Stein & Rios, 2025). Next, couples were asked to respond to three open-ended questions regarding their recently constructed networks, which could contain up to 40 individuals ($M = 38.64$). Following these questions, couples were then separated to answer questions individually. The results of those monadic responses are not included in this manuscript. Appendix A denotes the three questions posed to couples in this study.

Participant demographics

Of the 160 participants, 83 identified as cisgendered women, 75 as cisgendered men, and two as nonbinary. Couples reported their relationship length in months ($M = 67.86$, $SD = 107.69$) and their relationship typology, which included exclusively dating ($n = 43$), engaged/married/legally bonded ($n = 34$), and nonmonogamous ($n = 3$). The average age was 27.32 years ($SD = 12.58$). The ethnic makeup of the participants was as follows: Caucasian ($n = 133$), Latino ($n = 12$), Asian ($n = 8$), Mixed Race ($n = 5$), and Black/African American ($n = 2$). Seventeen of the 160 participants identified as nonheterosexual. Lastly, the religious affiliation was predominantly Christian[1] ($n = 94$), followed by "other[2]" ($n = 47$), atheistic ($n = 13$), and Buddhist ($n = 4$). Two participants did not declare a religious affiliation. Ninety-seven of the 160 participants identified as students of the local university.

Analysis plan

Couples' responses to three open-ended questions underwent open coding (see Strauss & Corbin, 1990). Once responses were anonymized, the principal investigator (PI) performed a cursory analysis of emergent themes. Then, the raw data were presented to two independent coders who were asked to inductively identify emergent themes across all three response sets. Following a conversation between the PI and the two research assistants, three emergent themes were confirmed for each response set. The PI compiled codebooks for each response set, unitized responses in line with the agreed-upon emergent themes, and assigned each coder the three datasets. Once coding finished, the PI and two coders reviewed code designations and ensured that the unitization efforts produced mutually exclusive responses. Kappa values for all three response sets were acceptable (K = .83, K = .88, and K = .87, respectively).

Results

The three open-ended questions produced 447 unitized responses. Sixty-two were coded as "non-accommodation," leaving 385 accommodation behaviors. The first question asked couples how, if at all, they converged when engaging with their network members as a dyad. This question (labeled *dyad-network convergence*) yielded 145 unitized responses ($M = 1.81$, converging behaviors per couple). The second question asked how, if at all, couples diverged when engaging with their network members as a dyad. This prompt (labeled *dyad-network divergence*) resulted in 94 unitized responses ($M = 1.18$ diverging behaviors, on average, per couple). The third question asked couples about the accommodating behaviors they noticed from network members (both converging and diverging). This question (labeled *network-dyad accommodation*) resulted in 136 unitized responses ($M = 1.70$behaviors noticed, per couple). Each category is discussed in more detail below.

Dyad-network convergence

The most common accommodation method was couple convergence toward network members. These behaviors were sorted into three themes. The most frequent was *formality and politeness* ($n = 90$). Some responses focused on slang and jargon (e.g., "When [Partner A] talks to friends, he uses more loose terms like 'bro' or 'whassup.' When [Partner B] talks to friends, she is . . . less personal."), whereas others pertained to cognizant choices related to conversational flow (e.g., "We change topics depending on who we are with [or] what interests we share with [them] . . ."). These efforts aimed to promote synergy and centered on network needs.

The second category, *nonverbal convergence* ($n = 28$), involved moderating nonverbal behavior, often related to public displays of affection (e.g., ". . . We do hand holding, some leaning on each other, maybe some cheek kisses. Nothing more than that around others, with the exception of our roommates."). Additional efforts related to issues of accent, exuberance, and vocal qualities (e.g., "When in the presence of family and or friends I am more shy, whereas behind closed doors I can 'let loose' a bit more . . ."). These adjustments often conveyed politeness and were explicitly nonverbal.

A third dyad-network convergence theme was *taboo topic avoidance* ($n = 27$). This often meant avoiding topics like politics or religion in the presence of certain people (e.g., "[Partner A] is more feminist and liberal with [Partner B's] friends but not with her family."). For some couples, this meant avoiding relationship disclosure, primarily related to their non-heterosexual status (e.g., " . . . There are people who we act as platonic friends and roommates around. This mainly includes [Partner A]'s parents and some older friends."). These responses focused less on politeness and more on protecting the couple's peace and status. In other words, the taboo topic avoidance theme was more focused on a couple's negative face, while formality and politeness reflected shared positive face needs.

Dyad-network divergence

Couples reported several diverging strategies when interacting with their social network members. The first theme, *jargon jamming* ($n = 42$), involved one or both partners altering vocabulary and/or inflection to appear unique, smart, or likable (e.g., "We swear more than most people in this area, and [Partner A] uses passionately inclusive language."). This method centered solely on language and its delivery.

Second, dyads noted efforts to make their character seem more distinguished ($n = 30$), a category named *personality pronouncement*. Whereas jargon jamming pertained to specific utterances, personality pronouncement focused on the qualities of one or both partners (e.g., "When [Partner B] is around her family, she . . . tries to set a positive example for her siblings and be open-minded to situations they may participate in."). Some, though not all, of these practices aimed to make one or both partners appear pro-social (e.g., "Around friends, [Partner A] is extra goofy, which is her most unique trait . . ."). Most responses highlighted extroversion and enthusiasm over politeness.

Lastly, couples articulated divergent intent but listed converging behaviors ($n = 22$), which were labeled *false convergence*. It is unclear whether participants misunderstood the prompt or believed their partner's behavior was divergent when, in reality, it aligned with convergence in context (e.g., "When [Partner A] is around his network, he jokes around more often as his network gets the jokes."). Notably, couples often described these behaviors as divergent, though the content aligned more with convergence (e.g., "In order to diverge . . . we tend to "read the room" to . . . pick up on others' lingo, matching their conversations more . . .").

Network-dyad accommodation

The final accommodation category involved couples' perceptions of their networks converging/diverging in their presence as a dyad. Unsurprisingly, these behaviors mirrored the patterns noted in the previous two response sets. First, couples noted that their networks attended to formality and politeness ($n = 59$). These efforts often involved language and topical choices (e.g., "[Partner A] and 'the boys' talk more about things that they can all relate to . . . whereas [Partner B] and 'the girls' talk about different topics."). These answers reflected an implicit awareness of politeness and face (e.g., "[Partner A's] network has much more crude humor when [Partner B] isn't around.").

Similarly, couples reported that their network members intentionally avoided taboo topics in their presence ($n = 44$). Some responses vaguely referenced select issues (e.g., "[Partner A's] parents don't bring up certain topics, because it's more private to the family."), while others described specific conversations to avoid (e.g., "[Partner B's] networks avoid communicating about religion when [Partner A] is around."). As in the dyad-network convergence category, these efforts focused more on protecting negative face and avoiding conflict than on positive face-focused politeness.

Table 1. Frequencies and descriptions of dyad-network accommodation responses.

Category	Sample quote	Frequency, *n* (%)
Dyad-network convergence		145 (37.7)
Formality & politeness	"We change topics depending on who we are with based on what interests we share with the people around us . . . "	90 (62.1)
Nonverbal convergence	"When in the presence of family and or friends I take a far more mild and shy demeanor, where as behind closed doors I can 'let loose' a bit more . . . "	28 (19.3)
Taboo topic avoidance	"[Partner A] is more feminist and liberal with [Partner B's] friends but not her family."	27 (18.6)
Dyad-network divergence		94 (24.4)
Jargon Jamming	"We swear more than most people in this area, and [Partner A] uses passionately inclusive language."	42 (44.9)
Personality pronunciation	"Around friends, [Partner A] is extra goofy, which is her most unique trait . . ."	30 (31.9)
False convergence	"When [Partner B] is around his network he jokes around more often as his network gets the jokes."	22 (23.4)
Network-dyad accommodation		136 (35.3)
Formality & politeness	"[Partner A's] network has much more crude humor when [partner B] isn't around."	59 (43.4)
Taboo topic avoidance	"[Partner B's] networks avoid communicating much about religion when [Partner A] is around."	44 (32.4)
Personality pronunciation	"Mutual friends are more emotionally open when just [Partner B] is around."	33 (24.3)

Finally, couples reported that their networks engaged in personality pronouncement ($n = 33$). These episodes involved the inclusion/seclusion of one or more partners (e.g., "Mutual friends are more emotionally open when just [Partner B] is around."). As with dyad-network divergence, the network members in question were more concerned with demonstrating their personality broadly, rather than using specific utterances or altering vocabulary (e.g., "[Partner A's] coworkers are more cheerful when [Partner B] is around."). A full summary of these results appears in Table 1.

Discussion

Study 1 aimed to define and conceptualize the construct of DNA. Open-ended responses from 80 couples produced 385 accommodation instances in the form of dyad-network convergence, dyad-network divergence, and network-dyad accommodation. Each theme contained three subcategories detailing how DNA occurs. Prior research (Sprecher & Felmlee, 2000) suggests romantic relationships are partly maintained via extra-dyadic communication episodes. Contemporary findings (Bernhold & Giles, 2020; So et al., 2022) echo the importance of accommodation tactics in dyad-network interplay. Study 1 reinforces this literature, specifying how couples and networks alter their verbal and nonverbal communication to foster ingratiation.

Study 1 provided ample evidence to proceed with the operationalization of the DNA phenomenon. Such a measure is imperative in determining the extent to which DNA affects dyad- and network-focused relational perceptions. In short, Study 1 confirmed DNA's ecological validity. With finite DNA categories identified, the collection of quantitative data was deemed appropriate. Study 2 reports these efforts.

Study 2

With an effective conceptualization of dyad-network accommodation established, the next reasonable step in variable creation is operationalization (see Mueller, 2004). Practically, it is important to measure the sources and content of dyad-network accommodation to explore the effects such a variable may have on relationship progression and outcomes. Thus, Study 2 was designed to operationalize and initially test a measure of dyad-network accommodation.

Study 2 involved three waves of data collection designed to facilitate EFA (Wave 1), CFA (Wave 2), and concurrent validity testing (Waves 2 and 3). Notably, EFA and CFA (see Hurley

et al., 1997, for guidelines) along with concurrent validity testing (e.g., Stein et al., 2020) are best performed with multiple rounds of data collection. These standards informed the decision to implement a three-wave study. The primary research questions guiding the operationalization of DNA are listed below.

RQ1: Can sources of DNA be measured?

RQ2: What is the a priori factor structure for the DNA measure?

When testing the DNA measure's concurrent validity, several variables were selected. First, incorporating additional network-based relational measures was essential. Second, dyad-based relational measures were necessary. Finally, including traditional communication and cognitive variables was appropriate. Below we discuss each of these variable types, our justifications for choosing them, and predictions related to the DNA measure's convergent and divergent validity.

To explore network-based measures, the network uncertainty measure (NUM; Stein et al., 2020) and network interference measure (Stein, 2018) were included. Both the NUM and network interference have shown modest correlations with preliminary measures of network-based accommodation (Stein, 2024). That said, the above studies, along with the foundations of CAT (see Zhang & Imamura, 2017), suggest a strong, positive relationship between experiences of network uncertainty and reported levels of dyad-network accommodation in all three forms.

H1: All three DNA subscales will positively correlate with the NUM measure.

Alternatively, dyad-network convergence and dyad-network divergence may not relate to measures of network interdependence (i.e., interference and facilitation) due to the locus of communication. Specifically, dyad-network convergence/divergence measures concern how a couple adjusts their communication. Network-dyad accommodation, on the other hand, is an other-report regarding how, if at all, the network adjusts to the romantic relationship's communicative needs. Network interdependence pertains to perceptions of network presence/behaviors in a person's life. Network-dyad accommodation efforts may be perceived as interfering or facilitative in nature. On the other hand, dyad-network convergence/divergence do not stem from the network, and are thus likely not perceived as interfering or facilitating.

Earlier work has set precedent for this (partially) null proposal, with measures of network interdependence showing no correlation with attachment tendencies (Stein et al., 2022) or the mechanisms of the investment model (Stein & Bennett, 2021). Thus, we predict divergent associations for dyad-network convergence and divergence, but convergent and opposite relationships between network-dyad accommodation and measures of network interference and facilitation, respectively. This is because, historically, network facilitation correlates with dependent variables in the opposite direction of network interference (see Stein, 2024; Stein & Davidson, 2019).

H2a: Measures of dyad-network convergence will not significantly correlate with measures of network interference.

H2b: Measures of dyad-network divergence will not significantly correlate with measures of network interference.

H2c: Measures of network-dyad accommodation will positively correlate with measures of network facilitation.

H2d: Measures of network-dyad accommodation will negatively correlate with measures of network interference.

Next, we were interested in exploring how the DNA measure relates to relational cognitions. To gauge these associations, we included measures of relationship satisfaction (Røysamb et al., 2014) and intimacy, which have been used to test concurrent validity for other network-based measures (see Stein et al., 2020). We expected divergent correlations for the DNA measure with both variables. Our primary reasoning here is that DNA is a process designed to ingratiate (or, in worse cases, dissociate) couples with the networks that surround them. Such conversations may reduce network uncertainty, which can improve intimacy and satisfaction (Stein, 2021), but should not themselves directly contribute to increasing relationship satisfaction or intimacy. Thus, these measures are included for the purpose of testing divergent validity.

H3: None of the three DNA subscales will share a correlation with participants' reported levels of intimacy.

H4: None of the three DNA subscales will share a correlation with measures of relationship satisfaction.

Lastly, we sought to explore the correlations between network-based communication (e.g., DNA) and relational communication. We used three variables to account for relational communication: relationship talk (Hale et al., 2005), conflict (Zacchilli et al., 2009), and affection (Floyd & Mikkelson, 2014). Dyadic accommodations around network members likely stem from and result in intra-couple conversations. These interactions are likely negotiations, which are conflict episodes. We thus expected positive associations between DNA and these two variables. On the other hand, much like perceptions of intimacy and satisfaction, the amount of expressed affection between partners should not vary much in relation to DNA. We thus offer a series of final predictions regarding the convergent and divergent validity of the DNA measure.

H5: All three DNA subscales will positively correlate with measures of relationship talk.

H6: All three DNA subscales will positively correlate with reported levels of conflict.

H7: None of the three DNA subscales will share a correlation with participants' reported levels of affection.

Methods

Study 2 employed three data collections using repeated measures ($N_{wave1} = 351$; $N_{wave2} = 337$; $N_{wave3} = 322$). We used *Prolific* to collect responses from an international sample (United States, Britain, and Canada) via Qualtrics surveys. To qualify for the survey, participants were required to be in a committed romantic relationship for at least 3 months and be at least 18 years of age. The data were collected one week apart.

Participants and procedures

Of the 351 participants in Wave 1,[3] 179 were women, 165 were men, and 7 were non-binary. The average age was 30.66 years ($SD = 9.28$). Sexual orientation included people of heterosexual orientation ($n = 296$), people with exclusively same-sex attraction ($n = 12$), bisexual people ($n = 28$), pansexual people ($n = 11$), and those who chose to identify with anunspecified "other" ($n = 4$). Participants described their relationships as seriously dating ($n = 180$), engaged/married ($n = 121$), non-married life partners ($n = 38$), and casually dating ($n = 12$). Respondents were Caucasian ($n = 228$), Black/African ($n = 67$), Latino/Hispanic ($n = 36$), East/South Asian ($n = 12$), and mixed race ($n = 8$). As part of a three-wave study, participants answered a series of Likert-style questions assessing, among other

things (i.e., demographics, member checks), the substantive variables in this study. For their time, participants were compensated at a rate of $4.50 per hour of survey completion.

Measures

Several valid, reliable measures were employed alongside the novel DNA measure.[4] First, Stein et al.'s (2020) NUM contains 18 items assessing five subscales of network uncertainty. For this study, the 18 items were compressed into a single, unidimensional variable, as recommended by the authors (M = 3.05, SD = 0.73, α = .92). Second, Stein's (2018) measure of network interference (five items; M = 3.39, SD = 1.19, α = .84) and network facilitation (five items; M = 4.85, SD = 0.33, α = .85) were gauged. Prior to responding to these measures, participants engaged in hierarchical mapping technique (see Stein & Moliterno, 2022) and were asked to recall their egocentric network members.

Third, Hale et al. (2005) measure of relationship talk (specifically two subscales measuring the depth and involvement of conversation, 14 items total) was used (M = 5.46, SD = 0.84, α = .89). Zacchilli et al.'s (2009) measure of conflict (specifically, six items designed to gauge interactional reactivity) was employed (M = 1.86, SD = 0.93, α = .81). Relationship satisfaction was gauged using Røysamb et al.'s (2014) measure (10 items; M = 5.37, SD = 1.26, α = .83). Next, intimacy was measured with Dibble's et al. (2012) scale (10 items; M = 6.14, SD = 1.20, α = .95). Finally, affection was measured using Floyd and Mikkelson's (2014) scale (nine items; M = 4.49, SD = 1.11, α = .91). The means, alphas, standard deviations, and descriptive features of the DNA measure will be provided in the results.

Results

Study 2's results are presented in three sections. The first addresses RQ1 and details the EFA (Wave 1). The second section describes the CFA (Wave 2). The third section outlines the bivariate correlations (Wave 2) and multiple regressions (Wave 3) that were used to test concurrent validity.

Exploratory factor analyses

The first research question asked whether the sources of the DNA could be measured. To answer this, open-ended responses from Study 1 were amalgamated to create three subscales: dyad-network convergence, dyad-network divergence, and network-dyad accommodation. Each subscale contained six items, anticipating that dimension reduction may produce shorter scales. The full list of items and participant prompts appears in Appendix B.

Following data collection, DNA items were subjected to EFA using SPSS 29. We employed a maximum likelihood extraction and oblique (i.e., direct oblimin) rotation, as factor intercorrelation was expected. We used the Kaiser – Guttman criterion, in which factors with eigenvalues above 1.0 are considered meaningful. Lastly, we used the .50–.30 decision rule to assign items to factors (i.e., primary factor loadings must be at least .50 and no other loading can be greater than .30; see Hurley et al., 1997).

Four rounds of EFA were employed. The first round produced four factors with an eigenvalue greater than 1.0; however, the fourth factor was comprised only of two items. Those two items, along with a third, did not meet the .50-.30 criterion for inclusion. The second and third rounds each produced three factors with an eigenvalue greater than 1.0. In each of these rounds, one additional item failed to meet the .50-.30 criterion and was thus removed. The final round produced three factors with an eigenvalue greater than 1.0 and contained 13 items, accounting for 60.1% of shared variance. Thus, five items failed to meet the inclusion criteria. The first subscale, dyad-network convergence, contained four items (M = 3.65, SD = 1.33, α = .76). The second subscale, dyad-network divergence, contained four items (M = 3.05, SD = 1.21, α = .79). The final subscale, network-dyad accommodation, contained five items (M = 3.60, SD = 1.27, α = .81). Subscale factors correlated positively with each other. Specifically, there was a significant positive relationship between the measures of dyad-network convergence and dyad-network divergence (r = .32). Second, there was a significant positive relationship between the measures of dyad-network convergence and network-dyad accommodation (r = .31).

Lastly, there was a significant positive relationship between the measures of dyad-network divergence and network-dyad accommodation ($r = .35$). Table 2 displays factor loadings, means, standard deviations, and alphas.

Confirmatory factor analysis

Following EFA, Wave 2 data were used to assess the DNA measure's a priori factor structure (RQ2). We used AMOS 28 to perform these analyses. Both Study 1 and EFA results revealed three distinct subcategories of dyad-network accommodation. What was not known was the extent to which these three subscales correlate and/or intercorrelate. For example, the NUM contains five subscales; however, the factor structure shows superior fit as a third-order, unidimensional variable (Stein et al., 2020). Alternatively, the network interdependence measure includes two distinct subscales that are correlated, but do not comprise a second-order latent variable (Stein, 2018). As such, several factor structures were explored: one in which the three subscales of the DNA measure – each comprised a single latent variable, another in which the three subscales composed a second-order unidimensional variable, a third model that considered both dyad-network subscales as part of a second-order latent variable with a single third-order unidimensional variable encompassing all subscales, and a final model that considered all 13 items as part of a single latent variable. Figure 1 illustrates the four models.

During the analyses, several indices evaluated model fit: X^2/df (Schumacker & Lomax, 2004; values <5.0 indicating acceptable fit and values <3.0 indicating excellent fit); confirmatory fit index (CFI; Hu & Bentler, 1999; values > .90 indicating acceptable fit and values > .95 indicating excellent fit); root mean square error of approximation (RMSEA; Browne & Cudek, 1993; Hu & Bentler, 1999; values < .08 indicating acceptable fit and values < .06 indicating excellent fit). The Tucker – Lewis index (TLI; Xia & Yang, 2019; values > .90 indicating acceptable fit and values > .95 indicating excellent fit) and the standardized root mean square residual (SRMR; Hu & Bentler, 1999; values < .10 indicating acceptable fit and values < .08 indicating excellent fit) were also used.

The first model demonstrated good-to-excellent fit: X^2/df = 3.12; CFI = .93; RMSEA = .079; TLI = .94; SRMR = .062. Standardized regression weights for this model all exceeded .65, and the intercorrelation between groups ranged from .30-.59. The second model presented near identical model fit: X^2/df = 3.12; CFI = .94; RMSEA = .079; TLI = .94; SRMR = .061. Group variances for this

Table 2. Means, standard deviations, reliabilities, eigenvalues, factor loadings, and descriptions of the 13 items that compose the DNA.

	Factor 1 *M* = 3.65 *SD* = 1.33 Eig. =4.29	Factor 2 *M* = 3.06 *SD* = 1.21 Eig. =1.83	Factor 3 *M* = 3.60 *SD* = 1.27 Eig. =1.70
Prompt	α = .76	α = .79	α = .81
1. Avoid showing public displays of affection around certain groups of people?	**.81**	.03	.01
2. Avoid certain topics of discussion that might be considered taboo to certain people in your network(s)?	**.59**	.02	.06
3. Act more polite around friends or family than you would if it were just the two of you?	**.52**	.15	.05
4. Avoid kissing or hand holding when at social or family gatherings?	**.79**	.05	.26
1. Attempt to show off your accent, vocabulary, or intelligence when in the presence of specific people or groups?	.04	**.58**	.06
2. Do everything you can to seem likable, nice, and funny in the presence of family or friends?	.04	**.98**	.12
3. Try to "prove" to friends/family that you two are right for each other?	.03	**.57**	.15
5. Do everything you can to seem friendly and approachable while around friends and/or family?	.07	**.64**	.13
2. Act especially polite when the two of you are together?	.14	.01	**.70**
3. Do their best to make the two of you feel comfortable during group activities?	.15	.01	**.58**
4. Steer clear of difficult conversations (e.g., religion or politics) when the two of you are around?	.07	.03	**.62**
5. Act more conscientious around the two of you than they would if just one of you were present?	.10	.08	**.68**
6. Do their best to avoid seeming inappropriate or rude during group gatherings?	.03	.01	**.73**

Note. Five items were removed during EFA. Appendix B contains the full 18 item list.

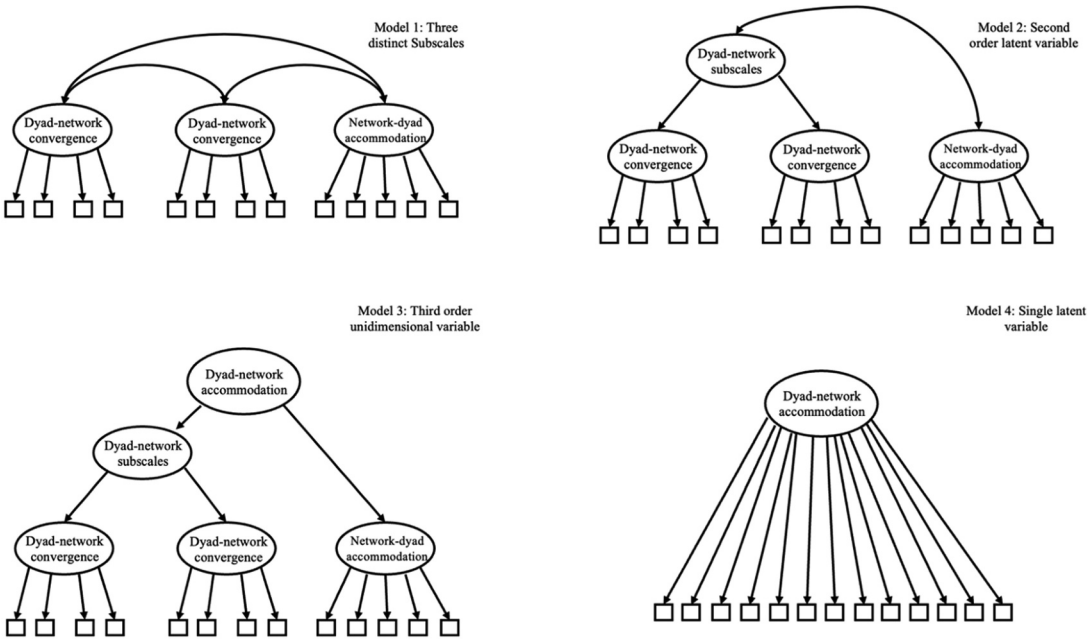

Figure 1. Proposed potential a-priori factor structure. Note. Only the 13 items verified during EFA were used in these model.

model ranged from .68 to 1.76 and were all significant ($p < .001$ in all cases). Intercorrelation between latent variables was .32. The third model also displayed good-to-excellent fit: $X^2/df = 3.08$; CFI = .93; RMSEA = .078; TLI = .93; SRMR = .062. The final model demonstrated unacceptable fit: $X^2/df = 5.67$; CFI = .85; RMSEA = .12; TLI = .86; SRMR = .11. These results indicate that the DNA measure is likely best used as three distinct subscale measures, rather than a unidimensional measure. The preferred factor structure is illustrated in Figure 2.

Concurrent validity tests

The first tests of concurrent validity were a series of bivariate correlations conducted using Wave 2 data. The subscale measuring dyad-network convergence shared significant, positive correlations with the NUM ($r = .33$, $p < .001$), network interference ($r = .20$, $p < .01$), conflict ($r = .29$, $p < .001$), and relationship talk ($r = .16$, $p < .05$). Moreover, this subscale correlated negatively and significantly with relationship satisfaction ($r = -.24$, $p < .01$), affection ($r = -.25$, $p < .01$), and intimacy ($r = -.17$, $p < .05$). The subscale measuring dyad-network divergence shared significant, positive correlations with the NUM ($r = .41$, $p < .001$), network interference ($r = .27$, $p < .001$), conflict ($r = .25$, $p < .01$), and relationship talk ($r = .19$, $p < .05$). Additionally, this subscale correlated negatively and significantly with relationship satisfaction ($r = -.12$, $p < .05$) and affection ($r = -.13$, $p < .05$). Finally, the subscale measuring network-dyad accommodation positively and significantly correlated with the NUM ($r = .24$, $p < .05$), network facilitation ($r = .19$, $p < .01$), and conflict ($r = .13$, $p < .05$). Interestingly, this subscale shared a significant negative correlation with network interference ($r = -.14$, $p < .05$) and intimacy ($r = -.19$, $p < .05$). These results provide partial support for H1–H7. Table 3 displays all significant and nonsignificant correlations for the three DNA subscales.

Following bivariate correlations, three hierarchical regressions were conducted to test the predictions of H1–H7. All eight items used to test concurrent validity were regressed onto dyad-network convergence, dyad-network divergence, and network-dyad accommodation, respectively. Network uncertainty, interference, and facilitation were entered in Step 1 of each regression. Intimacy and relationship satisfaction were entered in Step 2. Conflict, affection, and relationship talk were entered in Step 3.

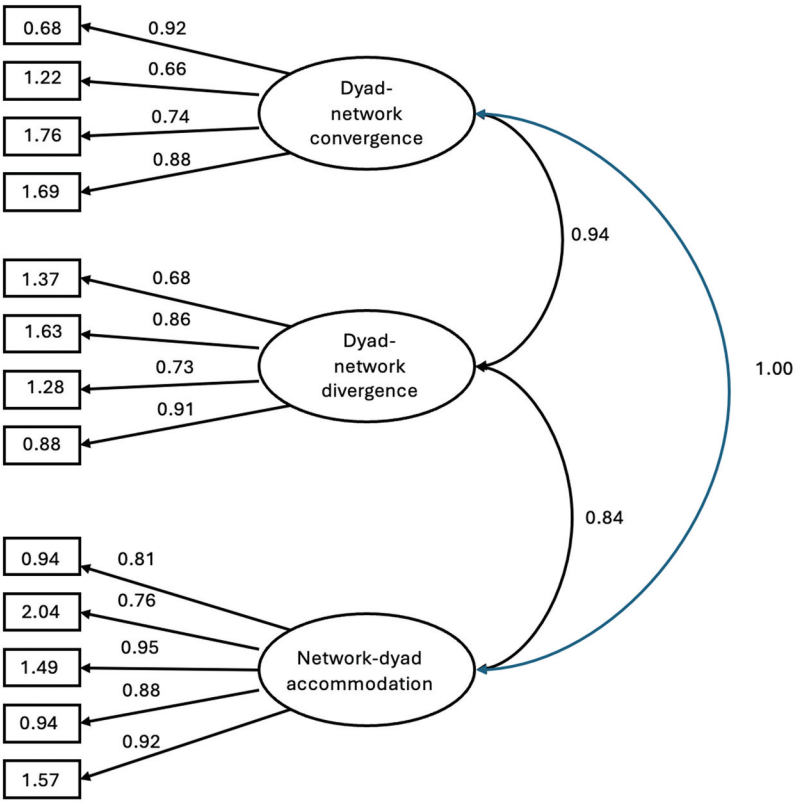

Figure 2. Final factor structure of CFA.

Table 3. Bivariate correlations between DNA measures and substantive variables.

Variable	Dyad-network convergence	Dyad-network divergence	Network-dyad accommodation
1. Network uncertainty	.33***	.41***	.24**
2. Network interference	.20**	.27***	−.14*
3. Network facilitation	.04	−.08	.19*
4. Relationship satisfaction	−.24**	−.12*	−.06
5. Intimacy	−.17*	−.08	−.19*
6. Relationship talk	.16*	.19*	−.04
7. Conflict	.29***	.25**	.13*
8. Affection	−.25**	−.13*	−.03

Note. *$p > .05$, **$p > .01$, ***$p < .001$.

The first model regressed H1–H7 variables on dyad-network convergence, explaining 17.8% of variance (adjusted $R^2 = .16$) and reaching significance at Step 3, $F(8, 313) = 13.55$, $p < .001$. At the third step, dyad-network convergence was positively associated with network uncertainty ($\beta = .27$, $p < .001$), relationship talk ($\beta = .13$, $p = .04$), and conflict ($\beta = .14$, $p = .05$) and negatively associated with affection ($\beta = -.22$, $p = .01$).

The second model regressed the H1–H7 variables on dyad-network divergence, explaining 21.8% of variance (adjusted $R^2 = .20$) and reaching statistical significance at the third step, $F(8, 313) = 11.41$, $p < .001$. At the third step, dyad-network divergence shared positive, significant correlations with network uncertainty ($\beta = .35$, $p < .001$), relationship satisfaction ($\beta = .28$, $p < .001$), and conflict ($\beta = .19$, $p < .001$). Alternatively, dyad-network convergence shared a negative, significant association with relationship talk ($\beta = -.12$, $p = .04$).

Table 4. Results of three distinct hierarchical regressions testing the concurrent validity of the DNA subscales.

	Outcome Variable					
	Dyad-Network Convergence $F(8, 313) = 13.55$, $p < .001$		Dyad-Network Divergence $F(8, 313) = 11.41$, $p < .001$.		Network-Dyad Accommodation $F(8, 313) = 3.69$, $p < .001$	
Independent Variable	R^2	β	R^2	β	R^2	β
	.12***		.19***		.06***	
Network Uncertainty		.27***		.35***		.23***
Network Interference		.06		.09		−.13*
Network Facilitation		.06		−.07		.24**
	.15**		.19		.07	
Intimacy		.03		−.10		−.07
Relationship Satisfaction		−.04		.28***		.04
	.18**		.22**		.09*	
Relationship Talk		.13*		−.12*		.04
Conflict		.14*		.19***		.11*
Affection		−.22**		−.08		.01

Note. $N = 322$. Total R^2 values are shown for each model, with asterisks indicating if the change in R^2 was or was not statistically significant. F values indicate those calculated at thee third step of each regression. Beta values are those present at the third step of each regression. *$p < .05$, **$p < .01$, ***$p < .001$.

The final model regressed the H1–H7 variables on network-dyad accommodation. This model explained 9.2% of variance (adjusted $R^2 = .07$) and reached statistical significance at the third step, $F(8, 313) = 3.69$, $p < .001$. At Step 3, dyad-network divergence shared positive, significant correlations with network uncertainty (β = .23, $p < .001$), network facilitation (β = .14, $p = .01$), and conflict (β = .11, $p = .05$). Moreover, network-dyad accommodation shared a negative, significant relationship with network interference (β = −.13, $p = .02$). Together, these results provide cumulative partial support for the seven hypotheses proposed in Study 2. Full regression results can be viewed in Table 4.

Discussion

The aim of Study 2 was to determine whether a DNA measure could be operationalized. This investigation involved EFA, CFA, and tests of concurrent validity. Results from a three-wave data collection confirmed that DNA can be measured, comprises three subscales, and has sufficient concurrent validity.

Research Questions 1 and 2 addressed the factor structure of the DNA measure – both exploratory and a priori. Our EFA produced three subscales comprised of 13 items. Notably, our EFA results explained only about 60% of variance. This number is modest, but in line with previous network-based measures, such as Stein's (2018) network interdependence model (61.78% explained variance) and Stein et al.'s NUM (68.04% of explained variance). One explanation for this trend of explained variance across network-based measures is the heterogeneity of social networks, broadly speaking. Scales that are self- or dyad-focused involve cognitions about fewer actors and can likely therefore produce more robust EFA results. That said, this may also be evidence of the need for additional data collections and, if necessary, scale refinement.

The 13 items were then subjected to several hierarchical CFA measurement models. Combined with the variety of correlations uncovered during tests of concurrent validity, these results confirmed that the DNA measure is most appropriately used as three distinct subscales. These subscales also demonstrated a reliable structure as a second-order and third-order unidimensional factor, similar to the five subscales in Stein et al. (2020) NUM. Statistically, these three models present little difference. As such, our recommendation for use is conceptual. One key difference between the DNA measure and the NUM is that the former reflects two types of communication behavior (convergence and divergence) from three sources (self, partner, and network), whereas the NUM contains five types of one perception (uncertainty) from one source (the self). Said differently, network uncertainty, as a construct, is unilateral and reliant on one person's perceptions. Dyad-network accommodation, as a construct, can be bilateral and pertains to three

actors (the self, the partner, and the network), rather than one. This distinction supports using the DNA measure as three subscales, rather than a unidimensional (or bidimensional) variable.

The second goal of Study 2 was to establish construct validity for the DNA measure, complementing the ecological validity uncovered in Study 1. Results from bivariate correlations and regression analyses provided ample support for the convergent, divergent, and concurrent validity of the DNA measure. These methods, like Stein et al.'s (2020) NUM, provide an important foundation for future use of the DNA measure.

In support of our recommended factor structure, the three subscales shared both overlapping and distinct correlations with the eight substantive variables. All three were positively associated with network uncertainty (H1) and enacted conflict (H6). Conceptually, both correlations make sense. Previous work (e.g., So et al., 2022; Stein, 2024) suggests that network uncertainty correlates more strongly with other network-based variables than with dyad-based variables, likely due to differences in the locus of communication (i.e., the network versus the relationship). Our regression results reinforce this conclusion. Similarly, a couple's efforts to converge/diverge with surrounding networks may both spur and result from conflict episodes (see Felmlee, 2001; Sprecher, 2011). The valence of these conflict episodes remains unclear.

Alternatively, only network-dyad accommodation correlated with both network interference (-) and network facilitation (+), fully supporting H2a–H2d. Stein's (2018) measure of network interdependence captures the extent to which network members help or hinder romantic relational development and goal completion. Ergo, when couples recognize accommodation behaviors from their networks (both ego- and duocentric), they likely perceive those networks as supportive. Alternatively, a lack of observed accommodations may lead one or both partners to view the network as obstructive, aligning with Sprecher's (2011) observation of network interference.

Third, both dyad-network convergence (+) and dyad-network divergence (-) correlated significantly with relationship talk, partially supporting H5. Like conflict, it is likely that specific converging behaviors both stem from and lead to relational communication, possibly because of heightened network uncertainty (Stein, 2024). In contrast, diverging behaviors may reflect dyadic independence, reducing the need for such conversations. This pattern may also explain why network divergence, but no other DNA subscale, was positively associated with relationship satisfaction (H4). Further research is needed to unpack the mechanisms of the DNA process, which extend beyond the scope of this measurement-focused study.

Finally, most but not all of our null hypotheses received support. For example, none of the three subscales of the DNA measure correlated with levels of intimacy (H3); however, there were significant associations present for relationship satisfaction (dyad-network divergence; H4) and affection (dyad-network convergence; H7). On one hand, these significant beta weights might be the result of suppression effects. On the other hand, concerted dyadic efforts to express the uniqueness of a relationship may bolster feelings of satisfaction in a way that converging behaviors simply do not. Similarly, efforts to converge with the network may lead a couple to engage in less affectionate displays in public, a norm that may bleed into one-on-one time. For this reason, additional research is needed to parse the ways in which dyad-network accommodation alters certain relational perceptions and behaviors, but not others. We offer initial thoughts on this possibility in the general discussion.

General discussion

The objective of this two-study project was to conceptualize and operationalize the DNA phenomenon. Broadly, that goal was met. The DNA measure provides a valuable tool for studying the influence of extra-dyadic actors in relationship development/maintenance and in the construction of a DNA theory. Properly defining and measuring substantive variables is essential for theory development, and the practice of testing numerous models prior to proposing theoretical frameworks is now common among communication scholars (see Kuang & Wilson, 2021; Solomon et al., 2016). We conclude by summarizing the general implications of both studies and offering directions for future research.

DNA as a variable

Phenomena such as network uncertainty (Stein et al., 2020) and network interdependence (Stein, 2018) illustrate the tangible assessments that romantic partners make about and within their networks. Contemporary research shows a clear association between network-based perceptions and relational cognitions (Hazzard, 2020; So et al., 2022; Stein & Davidson, 2019). The DNA measure adds to this growing literature by conceptualizing and operationalizing network-based relational communication. Study 1 collected qualitative, dyadic data that informed the Likert-style measure used in Study 2. Thus, the DNA measure has strong ecological validity.

The construct validity of the DNA measure is encouraging. Tests of convergent, divergent, and concurrent validity were all promising. Combined with reliable alphas across three waves of data collection and strong EFA/CFA results, the DNA measure appears both valid and reliable. Still, the DNA measure's validity may require minor modifications. Much like Stein (2018) used Solomon and Knobloch's (2001) partner interdependence measure when crafting his network interdependence measure, others may use the DNA measure, which targets social networks broadly, to access more specific extra-dyadic relationships (e.g., friends, siblings, parents). As such, the DNA measure may be more diverse and robust than initially shown.

Toward a theory of dyad-network accommodation

The growing body of literature on the DNA phenomenon seeks more than just to quantify dyad-network reports. This study, and those like it, are part of an ongoing effort to theorize, broadly, about the extra-dyadic features of and influences upon romantic relationships. Scholars such as Malcolm Parks (see Parks & Adelman, 1983; Parks et al., 1983), Susanne Sprecher (see Sprecher, 2011; Sprecher & Felmlee, 1992, 2000), and Brian Ogolsky (see Ogolsky et al., 2016, 2017) have long parsed these mechanisms; however, a communication-centric theory of dyad-network interaction remains absent.

Like other network-based measures (e.g., the NUM, the network-interdependence measure, and network overlap), the DNA measure correlates with dyad-based measures (see So et al., 2022; Stein & Davidson, 2019; Stein et al., 2020). The next step in theory development is to clarify issues like time order, strength of association, and confounding variables. For example, it is imperative to examine how network-based perceptions relate to network-based communication and whether dyad-based perceptions/communication mediate/moderate those associations. Ideally, both cross-sectional and longitudinal studies would be used to answer these questions. Finally, it is important to assess whether dyadic effects play a role in the DNA process. Methods such as the actor-partner interdependence model (see Cook & Kenny, 2005) may help to further unpack these elements of dyad-network integration.

Limitations and conclusion

Despite its strengths, this study is limited. First, future work should include more casual dating relationships (e.g., friends with benefits, fledgling partners). The quality and quantity of network-based cognitions are known to vary across relationship stages (Stein et al., 2020). The same may hold true for network-based communication. Second, although three distinct waves supported EFA, CFA, and validity testing, future studies should explore differences and associations across varied samples. Third, while regression analyses were useful for testing validity, more robust analyses (e.g., structural equation modeling, multi-level modeling) are needed for clearer assessments of association in both cross-sectional and longitudinal contexts. Such efforts are beyond the scope of this study but are theoretically and conceptually imperative. Lastly, there were certain demographic identifiers (e.g. socio-economic class, pregnancy status, and disability) that we did not collect in either study and were thus unable to report on.

In summation, this study sought to conceptualize and operationalize a measure of DNA. These efforts were largely successful and offer opportunities for future refinement, application, and

theorization. With several network-based variables validated and tested, relationship researchers can now explore DNA in diverse contexts. We look forward to furthering the study of dyad-network communication and its role in shaping relationship development.

Notes

1. The bulk of Christians ($n = 66$) identified as members of the Church of Jesus Christ of Latter-Day Saints, with an additional 10 identifying as Catholic and 18 identifying as "some other form of Christian." (is this a quote? because it should be Christianity not Christian)
2. Most cases of "other" were specified as being agnostic or spiritual, with three participants saying that they did not subscribe to any religious philosophy.
3. Note, numbers are slightly altered in waves 2 and 3 due to participant mortality. Full demographics are available upon request.
4. Note. All Likert-style scales ranged from one through seven, with one indicating lowest possible levels of the variable and seven indicating highest possible levels of the variable. Full scales are available upon request.
5. Note, couples were asked to comprise their duocentric and egocentric networks prior to this questioning. See Kennedy et al. (2015) for information on this method.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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Appendices

Appendix A

Open-ended questions asked to couples regarding dyad-network accommodation

In this next section we want you to speak a bit about the ways that you act, as a couple, when you're around your respective (or shared) social networks members. We understand that sometimes, couples need to change the ways in which they either 1) talk to each other when they're in the presence of certain people, or 2) talk with those same people. We call these "accommodating behaviors." One of the ways in which couples sometimes accommodate their social networks is through "convergence." Convergence is when either partner (or both partners) change their tone, rate, accent, or word choice to *match* that of the people who they are interacting with. This can mean avoiding certain topics or phrases. It can also mean purposefully including certain discussions, turns of phrase, or even performing specific nonverbal displays, as long as you are doing it because you're trying to seem more similar to the people that you are with.

Consider the list of 40 people you put together earlier.[5] How, if at all, do you converge your communication to align with any of those people? You can talk about specific examples, or you can just broadly explain how you chance your communication patterns when you're around some of these folks.

Another way in which people accommodate their communication is through "divergence." In this instance, people highlight the distinct features of their voice, lingo, nonverbal behaviors, or topics of conversation in an attempt to stand out, seem unique, or highlight differences.

Consider the list of 40 people you put together earlier. How, if at all, do you diverge your communication to distinguish yourself from any of those people? You can talk about specific examples, or you can just broadly explain how you change your communication patterns when you're around some of these folks.

Finally, it may be that your networks (individual or shared) change the ways in which they communicate when you are around as a couple. Consider the list of 40 people you put together earlier. How, if at all, do you feel your network(s), and the members in them, alter their communication when you are around, as a couple? This can involve purposefully avoiding or bringing up issues when only [Partner A] or [Partner B] is around, as opposed to when you are both there together. It can also involve the changing of communication patterns because you are present. Please list any converging or diverging behaviors you have noticed.

Appendix B

Prompts and items used for the DNA measure

For this next series of questions, we're going to ask you about the ways in which you and/or your partner communicate in the presence of your various social networks. As a reminder, we're asking you about friends, family, neighbors, coworkers, etc., and not about how you communicate while using social media.

First, we want to hear about how, if at all, you change the way that you talk with your partner to "match the vibe" of specific groups or people. For example, you may choose to act or speak a certain way when around friends and then act differently when around family. These sorts of changes are called "accommodations," and they're quite normal. Consider how, if at all, you and/or your partner make accommodations when communicating in the presence of your various social groups. As you answer these prompts, think about the ways that you may act when in the presence of your partner's friends and loved ones. Also think about how they act when they are around the people who you are closest to.

For the following prompts, please indicate how often you find yourself making the following accommodations in the presence of your social network members (1 = Never; 7 = All the time).

How often do you and/or your partner . . .

(1) Avoid showing public displays of affection around certain groups of people?
(2) Avoid certain topics of discussion that might be considered taboo to certain people in your network(s)?
(3) Act more politely around friends or family than you would if it were just the two of you?
(4) Avoid kissing or hand-holding when at social or family gatherings?
(5) Choose to not have difficult discussions about things like religion or politics?*
(6) Act like you're on your "best behavior" when around friends or family?*

In this next section, we want to continue hearing about the ways in which you and/or your partner accommodate your communication to fit in with various social groups. This time, we want to hear about some of the things that you two do to make yourselves stand out or seem unique around these folks. As you answer these prompts, think about the ways that you may act when in the presence of your partner's friends and loved ones. Also think about how they act when they are around the people who you are closest to.

For the following prompts, please indicate how often you find yourself making the following accommodations in the presence of your social network members (1 = Never; 7 = All the time)

How often do you and/or your partner . . .

(1) Attempt to show off your accent, vocabulary, or intelligence when in the presence of specific people or groups?
(2) Do everything you can to seem likable, nice, and funny in the presence of family or friends?
(3) Try to "prove" to friends/family that you two are right for each other?
(4) Change the volume, pitch, or speed of your voice when in the presence of various social groups?*
(5) Do everything that you can to seem friendly and approachable while around friends and/or family?
(6) Assert your independence when in the presence of certain groups of people?*

Now that you've answered a bit about how you and/or your partner accommodate your communication when in the presence of social network members, we want to remind you that these same network members may very well be making accommodations around you as well! Think about some of the ways in which, if at all, your and/or your partners social network members change their communication when the two of you are together. Think about both your friends/family here, as well as your partner's.

For the following prompts, please indicate how often you notice these social network members making the following accommodations in the presence of your and your partner (1 = Never; 7 = All the time)

How often do the members of you and/or your partner's social networks . . .

(1) Avoid topics that might be awkward to discuss with both of you in the room?*
(2) Act especially polite when the two of you are together?
(3) Do their best to make the two of you feel comfortable during group activities?
(4) Steer clear of difficult conversations (e.g., religion or politics) when the two of you are around?
(5) Act more conscientious around the two of you than they would if just one of you were present?
(6) Do their best to avoid seeming inappropriate or rude during group gatherings?

Note. Items marked with * were removed during EFA.