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Predicting Perceived Meaningfulness in Conversations: The Role
of Self-Disclosure, Emotional Support, and Age

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Abstrakt Deutsch

Alltägliche Gespräche zwischen Freund:innen unterscheiden sich darin, wie bedeutsam sie wahrgenommen werden. Bislang ist jedoch wenig darüber bekannt, welche spezifischen Gesprächsverhaltensweisen diese Erfahrung vorhersagen, insbesondere wenn verhaltensbasierte statt ausschließlich selbstberichtete Maße verwendet werden. Aufbauend auf der Sozioemotionalen Selektivitätstheorie und dem Interpersonalen Prozessmodell der Intimität untersuchte diese querschnittliche Studie, ob Alter, Selbstoffenbarung und emotionale Unterstützung mit der wahrgenommenen Bedeutsamkeit von Gesprächen zwischen Freund:innen zusammenhängen.

Fünfundvierzig Freundschaftsdyaden im Alter von 18 bis 79 Jahren nahmen an einem strukturierten 20-minütigen Laborgespräch über persönliche Entwicklung teil. Ein multimethodales dyadisches Design kombinierte die verhaltensbasierte Kodierung von Selbstoffenbarung und emotionaler Unterstützung anhand von Video- und Transkriptdaten mit Selbstberichtmaßen zur wahrgenommenen Bedeutsamkeit. Mehrebenenmodelle und Actor–Partner Interdependence Models wurden verwendet, um die verschachtelte Struktur der dyadischen Daten zu berücksichtigen. Die Ergebnisse zeigten, dass Alter nicht signifikant mit Selbstoffenbarung, emotionaler Unterstützung oder wahrgenommener Bedeutsamkeit zusammenhing. Emotionale Unterstützung durch die Gesprächspartner:innen war signifikant positiv mit wahrgenommener Bedeutsamkeit assoziiert. Auch die Interaktion zwischen eigener Selbstoffenbarung und emotionaler Unterstützung durch die Gesprächspartner:innen war signifikant. Diese Befunde legen nahe, dass das Gefühl, von Freund:innen unterstützt zu werden, gemeinsam mit dem Zusammenspiel von Selbstoffenbarung und emotionaler Unterstützung, ein zentraler Faktor dafür sein kann, ein Gespräch als

bedeutsam zu erleben. Dies steht im Einklang mit dem Interpersonalen Prozessmodell der Intimität.

Schlüsselwörter: Bedeutsamkeit, Selbstoffenbarung, Emotionale Unterstützung, Freundschaft , Alter

Abstract

Everyday conversations between friends vary in perceived meaningfulness, yet little is known about which specific conversational behaviors predict this experience, particularly when behavioral rather than self-report measures are used. Drawing on Socioemotional Selectivity Theory and the Interpersonal Process Model of Intimacy, this cross-sectional study examined whether age, self-disclosure, and emotional support are associated with the perceived meaningfulness of conversations between friends. Forty-five friend dyads aged 18 to 79 years took part in a structured 20-minute laboratory conversation about personal development. A multimethod dyadic design combined behavioral coding of self-disclosure and emotional support from video and transcript data with self-report measures of perceived meaningfulness. Multilevel models and Actor–Partner Interdependence Models were used to account for the nested structure of the dyadic data. Results indicated that age was not significantly associated with self-disclosure, emotional support, or perceived meaningfulness. Partner emotional support was significantly and positively associated with perceived meaningfulness. The interaction between actor self-disclosure and partner emotional support was also significant. These findings suggest that feeling supported by a friend, together with the interplay between self-disclosure and emotional support, may be a key factor in experiencing a conversation as meaningful, consistent with the Interpersonal Process Model of Intimacy.

Keywords: Meaningfulness, Self-Disclosure, Emotional Support, Friendship, Age

Predicting Perceived Meaningfulness in Conversations: The Role of Self-Disclosure, Emotional Support, and Age

Human beings are fundamentally social creatures, engaging in numerous conversations throughout their everyday lives. Yet not all of these interactions feel equally meaningful: some create closeness, understanding, and emotional connection, whereas others remain superficial or unfulfilling (Nikitin et al., 2024; Reis & Shaver, 1988; Tausczik & Pennebaker, 2010). This distinction matters beyond subjective experience, as a growing body of research links social life to multiple aspects of health. The size and quality of friendship networks have both been associated with mental health, happiness, physical health, and mortality risk (Dunbar, 2017). Yet interaction quality may be particularly important, as it appears more strongly associated with loneliness than interaction quantity alone (Pinquart & Sörensen, 2003). Beyond quantity and quality broadly defined, conversational features such as pleasantness and depth have also been linked to well-being (Bernstein et al., 2018; Mehl et al., 2010).

The present thesis focuses specifically on conversations between platonic friends, rather than romantic partners or family members. In this context, friendships can be understood as voluntary relationships characterized by continued contact and emotional bonds, developed and maintained in part through communication and conversation (Arroyo & Segrin, 2011; Dunbar, 2017; Leaper, 2019). Self-disclosure and emotional support are particularly relevant conversational behaviors, as both have been associated with more positive perceptions of relationships and may foster emotional connection, understanding, and validation (Leaper, 2019; Lee, 2022).

However, as prior research on self-disclosure and emotional support has often relied on self-report measures, little is known about how specific conversational behaviors are linked to the perceived meaningfulness of interactions (Kreiner & Levi-Belz, 2019). Adding further complexity, age may also shape how meaningful conversations are perceived, as lifespan theories of social motivation suggest that older adults tend to place greater value on emotionally meaningful interactions (Carstensen et al., 1999; Nikitin et al., 2024).

To address this gap, the present study uses a multimethod design combining self-report measures with behavioral coding of conversations between adult friend dyads across a broad age range to examine how age, self-disclosure, and emotional support are associated with perceived conversational meaningfulness.

The dyadic design further allows for the examination of actor and partner effects, testing whether perceived meaningfulness is associated not only with a participant's own self-disclosure and emotional support, but also with that shown by their friend. Together, these features offer a more behaviorally grounded and interpersonally sensitive account of what makes conversations between friends feel meaningful.

Theoretical Background

Meaningfulness in Social Interactions Across Adulthood

In line with Nikitin et al. (2024), meaningful social interactions are defined as interactions that are personally important, valuable, and experienced as purposeful. Meaningfulness is therefore understood as a subjective cognitive appraisal of an

interaction's personal importance rather than as a quality determined by outside observers.

While this may resemble related constructs such as intimacy, the two are not identical. Intimacy refers more directly to emotional closeness, whereas meaningfulness captures whether an interaction is experienced as personally important, valuable, and purposeful (Nikitin et al., 2024; Reis & Shaver, 1988). Because the present study examines social goals across the lifespan within platonic friendships, perceived meaningfulness is used as the primary outcome variable.

Socioemotional Selectivity Theory proposes that perceived time plays a central role in shaping the goals people pursue and the social partners they seek to fulfill them with (Carstensen et al., 1999). The theory differentiates between an open-ended time perspective, which is more typical in younger adulthood, and a limited time perspective, which becomes more common with increasing age. As future time horizons narrow, individuals are expected to shift their focus from knowledge-related goals to emotion-related goals. Knowledge-related goals are future-oriented and include seeking information, expanding social networks, pursuing novel experiences, and building resources that may be useful later in life. Emotion-related goals are more present-oriented and include maintaining emotional closeness, regulating emotions, preserving meaningful relationships, and maximizing present-moment well-being (Carstensen et al., 1999).

This age-related shift in social goals is expected to be reflected in changes in social interaction as well as in the prioritization and maintenance of close, emotionally satisfying relationships (Carstensen et al., 1999). Consistent with Socioemotional Selectivity Theory, older adults tend to have smaller social networks but report higher relationship quality, more positive emotions, fewer negative

emotions, and fewer interpersonal conflicts than younger adults (Birditt & Fingerman, 2003; Luong et al., 2011). They also report fewer interpersonal stressors and tend to evaluate their own and others' behavior more favorably during conflicts (Almeida & Horn, 2004; Blanchard-Fields & Coats, 2008).

Older adults tend to process positive stimuli preferentially over negative stimuli, a phenomenon known as the age-related positivity effect (Kennedy et al., 2004). They may also have developed better skills at avoiding negative relationships and making more adaptive judgments about social partners than younger adults (Hess, 2005; Hess & Auman, 2001; Hess et al., 1999). Nikitin et al. (2024) found that older adults perceive their everyday interactions as more meaningful than younger people.

Together, these findings suggest that older adulthood may provide a social context in which emotionally meaningful interactions become more central. Accordingly, age was expected to be positively associated with perceived meaningfulness in conversations between friends. Age may also be associated with conversational behaviors that support meaningful interaction, such as self-disclosure and emotional support.

While Socioemotional Selectivity Theory provides a framework for understanding age-related differences in meaningful social interactions, it does not specify which conversational behaviors may be associated with meaningfulness within a specific interaction. The following section therefore focuses on self-disclosure and emotional support as two central conversational behaviors in conversations between friends.

Self-Disclosure, Emotional Support, and Meaningfulness in Conversations

Self-disclosure is understood as the sharing of private feelings, thoughts, beliefs, and attitudes (Anderson & Leaper, 1998). Talking about personal and often sensitive topics can allow conversation partners to gain a deeper understanding of the other person and their relationship (Leaper, 2019). Such disclosures, however, rarely occur in isolation, they typically invite a response from the conversation partner.

Emotional support is one facet of social support that is directly embedded in conversational processes (House, 1981). Therefore support is especially relevant as it often occurs in response to self-disclosure and can be assessed through behavioral coding of interactional behavior. Emotional support includes interpersonal and intimate gestures, expressions and behaviors. It can be conveyed through physical contact, attentiveness, advice, empathetic listening, consultation, or encouragement (Keyes, 2002). Research has found that receiving emotional support is associated with well-being and fewer symptoms of mental illness (Keyes, 2002). In contrast, distancing or negative responses may be associated with more negative emotional experiences and undermine coping (Feng & MacGeorge, 2006; Leaper, 2019).

Because emotional support is often elicited by personal disclosure, self-disclosure can be understood as a starting point for interactional processes that shape the perceived quality and meaningfulness of a conversation (Reis & Shaver, 1988). The relevance of self-disclosure and emotional support can be explained through the Interpersonal Process Model of Intimacy (Reis & Shaver, 1988). The model proposes that intimacy develops through a transactional process in which one person discloses personal feelings or information and the conversation partner responds. Although the original model focuses on intimacy, its core mechanism is relevant to perceived

meaningfulness because meaningful conversations may also involve feeling understood, valued, and personally connected (Nikitin et al., 2024).

Applied to the present study, self-disclosure may create opportunities for a conversation to be experienced as meaningful, while emotional support may shape whether these opportunities are ultimately experienced as such (Reis & Shaver, 1988). If the responding partner reacts to disclosure in a way that is relevant to the specific situation and conveys a high level of responsiveness through understanding, validation, or caring, the conversation may be perceived as more meaningful (Laurenceau et al., 2005; Reis & Shaver, 1988). In contrast, if self-disclosure is met with distancing or negative responses, the conversation may be perceived as less meaningful (Feng & MacGeorge, 2006; Leaper, 2019).

The perceived meaningfulness of a conversation may therefore depend not only on one person's own behavior, but also on the interconnected communication process between both partners, including the behavior of their friend. Because the present study uses a dyadic design, it is possible to examine whether perceived meaningfulness is associated with both participants' own behavior and their friend's behavior. Actor effects refer to associations between participants' own self-disclosure or emotional support and their own perceived meaningfulness. Partner effects refer to associations between the friend's self-disclosure or emotional support and participants' own perceived meaningfulness. This allows the study to test whether conversations feel more meaningful not only when participants themselves disclose or provide support, but also when they receive disclosure or emotional support from their friend.

Thus, the present study examines perceived meaningfulness in friend conversations as a function of age and the two conversational behaviors self-

disclosure and emotional support. The dyadic design further allows these associations to be tested at both the actor and partner level.

Hypotheses

The first three hypotheses concern main effects of age on conversational behavior and perceived meaningfulness, derived from Socioemotional Selectivity Theory. The final two hypotheses concern the relationship between conversational processes and perceived meaningfulness within interactions, derived from the Interpersonal Process Model of Intimacy.

H1: Older participants will engage in greater self-disclosure during conversations compared to younger participants.

H2: Older participants will express higher levels of emotional support during conversations compared to younger participants.

H3: Older participants will perceive conversations as more meaningful than younger participants.

H4: Greater emotional support expressed by actor and partner will be positively associated with perceived meaningfulness of the conversation by the actor and the partner.

H5: Greater self-disclosure expressed by actor combined with higher levels of emotional support expressed by the partner will be positively associated with perceived meaningfulness of the conversation by the actor and the partner.

Method

Sample and Sensitivity Analyses

The present thesis is part of a larger research project that aims to recruit 100 friend dyads. At the time of submission of the present master's thesis, data collection was still ongoing, and 45 dyads had participated in the study. Thus, the final sample consisted of 90 participants. Participants were recruited by the four master's students involved in the project and by approximately 25 bachelor's students enrolled in a research seminar taught by the principal investigator in the summer term of 2026. Recruitment primarily took place through student networks, community postings, university programs, and flyers. Because recruitment of older adults progressed more slowly than expected, the final sample overrepresented younger adults and university students, this imbalance is considered in the interpretation of the results.

Participation was voluntary and informed consent was obtained before the start of the study. To be eligible for participation, both members of a dyad had to be at least 18 years old, single, in a platonic friendship with each other, and sufficiently proficient in German to complete the questionnaires and participate in the conversation task.

Participants could choose to receive either five LABS points, which are student credits for the Bachelor of Psychology at the University of Vienna, or financial compensation of 15 euros per person. If participants discontinued the study, they received partial compensation. Financial compensation was funded by the Faculty Postdoc Award of the Faculty of Psychology at the University of Vienna.

Participants were between 18 and 79 years old, with a mean age of 31.7 ($SD = 18.25$; $Mdn = 22$). 26.7% ($n = 12$) of the dyads were mixed-gender pairs, while 28.9% ($n = 13$) were male and 44.4% ($n = 20$) were female friendship pairs. To describe the

age distribution in more detail, participants were grouped into the following age categories: 18–29 years ($n = 64$), 30–39 years ($n = 2$), 40–49 years ($n = 4$), 50–59 years ($n = 8$), 60–69 years ($n = 9$), and 70–79 years ($n = 3$).

Age distribution differed somewhat across dyad groups. In male–male dyads, 84.6% ($n = 22$) participants were between 18 and 29 years old, followed by 3.8% ($n = 1$) of participants aged 40–49 years and 11.5% ($n = 3$) 50–59 years old. In mixed-gender dyads, 75.0% ($n = 18$) of participants were aged 18–29, with 8.3% ($n = 2$) in the 30–39, 40–49, and 60–69 age groups each. In female–female dyads, 24 (60.0%) participants were aged 18–29 years, followed by 1 aged 40–49 years (2.5%), 5 aged 50–59 years (12.5%) and 7 participants aged 60–69 years (17.5%), and 3 aged 70–79 years (7.5%). In line with the predictions derived from Socioemotional Selectivity Theory, age was treated as a continuous variable in the main analyses.

All participants reported good (1.1%) to very good (98.9%) German language skills, indicating sufficient proficiency to complete the questionnaires and participate in the conversation task. With respect to gender identity, 57.8% ($n = 52$) of participants identified as female and 42.2% ($n = 38$) as male. Regarding sexual orientation, 76.7% ($n = 69$) identified as heterosexual, 6.7% ($n = 6$) as gay or lesbian, 14.4% ($n = 13$) as bisexual or pansexual, and 2.2% ($n = 2$) provided no information.

Regarding educational background, 23.3% ($n = 21$) held a university degree, 64.4% ($n = 58$) had completed Matura or Abitur, 5.6% ($n = 5$) had completed a vocational apprenticeship, 1.1% ($n = 1$) had completed compulsory schooling, and 5.6% ($n = 5$) reported another form of education.

Regarding employment status, 25.6% ($n = 23$) were employed or apprentices, 60% ($n = 54$) were in training or education, 8.9% ($n = 8$) were retired, 2.2% ($n = 2$)

were seeking employment, and 3.3% ($n = 3$) reported being primarily engaged in domestic work or caregiving.

Most participants lived in Vienna (86.7%, $n = 78$), whereas 13.3% ($n = 12$) lived in another Austrian federal state. In terms of family situation, 20.0% ($n = 18$) reported having children or stepchildren, and 10.0% ($n = 9$) reported having grandchildren.

To evaluate the sensitivity of the planned statistical models and to clarify the magnitude of effects that could be detected with the available sample, simulation-based sensitivity analyses were conducted.

For the age-related hypotheses, simulations based on the linear mixed model structure used for H3, with age as the focal predictor and random intercepts for dyads, indicated that the model had sufficient power to detect an age effect of approximately $b = 0.025$ per year. Based on 500 simulations, power for this effect was 90.20%, 95% CI [87.25%, 92.66%]. Thus, the model was adequately powered to detect effects of this magnitude or larger, whereas smaller effects should be interpreted with caution. For the dyadic hypotheses, simulation-based sensitivity analyses based on 500 simulations indicated that the Actor–Partner Interdependence Model had approximately 80% power to detect actor and partner effects of $b = 0.35$ or larger. Specifically, power was 80.6%, 95% CI [76.86%, 83.98%], for $b = 0.35$. Thus, actor and partner effects smaller than approximately $b = 0.35$ should be interpreted with caution.

Design and Procedure

The study followed a dyadic observational design. Each friend dyad participated in one laboratory session at the University of Vienna. Prior to the laboratory appointment, participants completed an online baseline assessment. This was done to reduce possible priming effects of the questionnaires.

The laboratory session took place in an observation laboratory equipped with two cameras and a microphone to obtain high-quality recordings of the interaction. Upon arrival, participants were welcomed by one of the master's students, who provided a brief overview of the procedure. The total session lasted approximately 40 minutes. Of this time, 20 minutes were devoted to the interaction task, and approximately 20 minutes were used to complete pre- and post-interaction questionnaires.

Before the interaction task, participants completed a short pre-interaction questionnaire. Variables not relevant to the present thesis are not described further. For the interaction itself, participants proceeded to a separate room, where they engaged in a 20-minute conversation while observers monitored the interaction remotely. Before the conversation started, participants received written instructions as well as a verbal explanation and had the opportunity to ask questions.

Participants were instructed to talk about their personal development during the past five years. To determine who would begin, participants drew numbered slips of paper at random. During the first ten minutes, the conversation focused on the personal development of the first dyad member. Following a signal from the principal investigator, the focus shifted to the second dyad member for the remaining ten minutes. After the interaction task, participants completed a post-interaction questionnaire assessing perceived meaningfulness of the conversation. Finally,

participants were debriefed with a written explanation of the study's purpose and had the opportunity to ask remaining questions.

The conversations were video- and audio-recorded. Nonverbal indicators of emotional support were coded from the video recordings. Verbal self-disclosure and verbal emotional support were coded from transcripts generated with TurboScribe and subsequently checked by members of the research team or bachelor's students involved in the project.

Measures

Demographic Variables

During the baseline assessment, participants reported demographic information, including age, gender identity, sexual orientation, German language proficiency, place of residence, nationality, subjective health, education, employment status, family situation, and household composition.

Perceived Meaningfulness

Immediately after the conversation task, participants completed a post-interaction questionnaire assessing the perceived meaningfulness of the interaction. In line with the procedure used by Nikitin et al. (2024), meaningfulness was assessed using two items rated on 7-point Likert scales. Participants responded to the questions "How important was this interaction to you?" and "How meaningful was this interaction to you?" with response options ranging from 1 (*extremely unimportant* /

extremely meaningless) to 7 (*extremely important / extremely meaningful*). In the present sample, the two items were strongly positively correlated, $r = .783$, supporting their aggregation into a composite measure. The mean of the two items was therefore used as the measure of perceived meaningfulness, with higher scores indicating greater perceived meaningfulness of the conversation.

Observed Self-Disclosure

Similar to Omarzu (2000), transcripts were segmented into speech units prior to coding. Segmentation followed a rule-based procedure applied in a fixed order. Each change of speaker resulted in a new unit. In addition, clauses were used as the primary segmentation criterion, such that each clause containing a finite verb was treated as a separate unit, regardless of whether it was a main or subordinate clause. Conjunctions such as “and,” “or,” “but,” “because,” “although,” and “that” were used as segmentation boundaries when followed by a clause with its own finite verb. In such cases, the conjunction was retained at the beginning of the new unit.

Conjunctions that connected phrases without a finite verb did not trigger segmentation, and infinitive constructions with “to” were not separated from the main clause. This procedure ensured a consistent segmentation of transcripts into linguistically meaningful units suitable for subsequent coding of self-disclosure and emotional support.

Self-disclosure was coded using a scheme based on Omarzu (2000), capturing three dimensions of observed self-disclosure: breadth, duration, and depth.

Breadth was assessed by counting the number of different topics covered by a participant’s self-disclosure statements. The coding scheme included the following

topics: *physical health, mental health, performance, education or training, work, partnership, friendship, family, leisure or hobbies, travel, appearance or style, future plans or dreams, and personality or identity*. If no predetermined topic applied, the category “*other topics*” was used.

Duration was calculated based on the number of self-disclosure segments, normalized by the total number of speech segments produced by the participant. All transformations and index calculations were conducted in R (R Core Team, 2025). Higher values therefore indicate that a larger proportion of a participant’s speech contained self-disclosure.

Depth was assessed by differentiating between superficial and deep self-disclosure. *Superficial self-disclosure* included observable facts, mere preferences or chronological storytelling without emotional evaluation. *Deep self-disclosure* was defined by the expression of internal processes, such as emotions, values, vulnerabilities, or the admission of weaknesses or wrongdoings. Depth was calculated as the proportion of deep self-disclosure segments relative to all self-disclosure segments (Omarzu, 2000). The three dimensions of observed self-disclosure were z-standardized and averaged to create an overall observed self-disclosure index. Higher scores indicate greater observed self-disclosure during the conversation. Interrater reliability was assessed on 10% of the transcripts independently coded by two coders. Agreement for self-disclosure coding was excellent, Cohen’s $\kappa = .855$.

Additional Measures for Exploratory Analyses

Self-reported self-disclosure was assessed for exploratory analyses using a German translation of the Self-Disclosure Index (Miller et al., 1983). The scale consists of ten items assessing how often participants discuss different topics with

their friend on a 5-point Likert scale ranging from 1 (not at all) to 5 (fully and completely). Example items include “Things I have done which I feel guilty about” and “What is important to me in life.” A mean score was calculated across all items. In the present sample, internal consistency was good, Cronbach’s $\alpha = .83$, 95% CI [.80, .86].

Friendship duration was assessed in the baseline questionnaire by asking participants how long they had known their friend. Participants reported the duration in years and months. For the exploratory robustness analyses, responses were converted into months and z-standardized before analysis.

Observed Emotional Support:

Observed emotional support was coded using verbal and nonverbal indicators. Emotional support was coded from the transcripts and based on prior coding schemes (Bodie et al., 2015; Kuhn et al., 2018; Leaper, 2019). Listener responses were conceptualized as ranging from highly active and supportive responses to distancing or negative responses. Each listener speech act was assigned to one mutually exclusive coding category.

Highly active and supportive responses included *elaboration*, *probing questions*, *reframing*, and *advice*. *Elaboration* referred to meaningfully adding to the partner’s disclosure, for example, “That reminds me of something that happened to you on vacation.” *Probing questions* invited the partner to reflect further on their experience, for example, “What do you think triggered that reaction?” *Reframing* referred to helping the partner interpret or better understand an experience, for example, “This is not the first time something similar has happened.” *Advice* involved offering suggestions to help with a problem, for example, “Perhaps you could talk to

him about that issue.”

Moderately supportive responses included showing similarity, encouraging, simple acknowledgments, clarification questions, and *backchannel* listening responses.

Showing similarity referred to briefly indicating shared experience without shifting the focus away from the partner. *Encouraging* involved inviting further elaboration, for example, “What happened then?” *Simple acknowledgments* were short statements indicating empathy or understanding, for example, “That sounds upsetting.”

Clarification questions were short questions used to clarify meaning, and backchannel listening responses included brief signs of attention, such as “mmhm” or “okay.”

Distancing or negative responses included *self-focused disclosures*, *irrelevant responses*, and *negative responses*. *Self-focused disclosures* shifted the conversational focus from the partner to oneself. *Irrelevant responses* introduced topics unrelated to the partner’s disclosure. *Negative responses* included critical, trivializing, or dismissive comments, as well as abrupt topic changes.

These categories were not analysed separately but were combined into one verbal emotional support index. This weighting scheme was used to reflect the theoretical assumption that active supportive responses indicate stronger emotional support than brief acknowledgments, whereas distancing responses indicate reduced support.

To compute the verbal emotional support index, the three categories were first weighted according to their level of supportiveness. Highly active/supportive responses were multiplied by 2, moderately supportive responses by 1, and distancing/negative responses by –2. A weighted raw score was then calculated for each participant:

ES points = (number of highly active/supportive responses $\times$ 2) + (number of moderately supportive responses $\times$ 1) + (number of distancing/negative responses $\times$ -2).

This score was divided by the total number of speech segments produced by the participant, to control for differences in conversation length and speech frequency:

$$ES = \text{ES points} / \text{total number of transcript units}.$$

Finally, the ES rate was z-standardized across all participants. This standardized value represented the verbal emotional support index, with higher values indicating more supportive verbal behavior during the conversation.

Nonverbal emotional support was coded from the video recordings and included nodding, physical attentiveness, and looking away. *Physical attentiveness* was coded based on body orientation and physical posture. *Highly attentive behavior* was coded when participants actively reduced physical distance toward their partner. *Negative/distancing behavior* was coded when the body was turned away from the partner while only the head remained directed toward them. *Nodding* was coded in 30-second intervals as present or absent and was used as an indicator of backchanneling. *Looking away* was coded in 30-second intervals as present or absent and was used as an indicator of reduced attentiveness or distancing (Reis & Shaver, 1988).

Physical attentiveness was evaluated based on duration. For each participant, the percentage of the conversation spent in highly attentive, moderately attentive, and distancing positions was calculated. Highly attentive and distancing attentiveness

were then used to create nonverbal support indicators, with distancing attentiveness reverse-coded.

The verbal emotional support index and the nonverbal emotional support indicators were z-standardized and combined into an overall observed emotional support index. Higher scores indicate greater observed emotional support. Correlations among the verbal and nonverbal emotional support indicators were inspected before aggregation and are reported in the Results section. All transformations and index calculations were conducted in R (R Core Team, 2025). Interrater reliability of the behavioral analysis was assessed on 3 of the 45 videos independently coded by two coders. For cases that were double-coded for the purpose of assessing interrater reliability, the final value used in the analyses was calculated as the mean of the two independent coders' ratings. Interrater reliability was calculated for verbal and nonverbal coding categories. For verbal codes, agreement was high. For moderately supportive emotional support responses, $\kappa = .774$ and highly supportive emotional support responses, $\kappa = .792$. Distancing/negative emotional support responses did not occur in the double-coded transcripts and were rare overall. Therefore, no separate reliability estimate could be calculated for this category. For nonverbal codes, reliability varied across categories: $\kappa = .417$, for highly attentive behavior; $\kappa = .462$, for nodding as support and $\kappa = .821$, for looking away during support. However, the reliability estimate for nodding should be interpreted with caution, as preliminary checks suggested that longer nodding episodes may sometimes have been coded at slightly different time points while referring to the same behavioral event. Therefore, the current estimate may be conservative. At the time of submission, this issue was still under review, and the exact reliability of the nodding code could not yet be conclusively determined.

Statistical Analysis

Main analyses were conducted using observed self-disclosure and observed emotional support. Age was treated as a continuous predictor and z-standardized prior to analysis. Missing data were handled using complete-case analysis. No imputation was conducted.

Gender was included as an additional predictor because previous research suggests that conversational behaviors such as self-disclosure and emotional support may differ by gender (Burleson, 2003; Goldshmidt & Weller, 2000). Including gender therefore allowed the analyses to account for potential gender-related differences in the conversational processes examined in the present study.

To test H1 and H2, multilevel linear models were estimated with observed self-disclosure and observed emotional support as dependent variables and age as the fixed-effect predictor. To test H3, perceived meaningfulness was regressed on age. All age-related models included a random intercept for dyad to account for the interdependence of observations within dyads.

To account for the non-independence of dyadic data and to test H4 and H5, Actor–Partner Interdependence Models were estimated (Cook & Kenny, 2005). Perceived meaningfulness served as the dependent variable.

In the model for H4, actor and partner observed emotional support were entered simultaneously as fixed-effect predictors of perceived meaningfulness. In the model for H5, actor self-disclosure and partner emotional support were entered simultaneously as fixed-effect predictors. These models allowed the estimation of

actor and partner effects while accounting for interdependence within dyads. In additional exploratory analyses, the models using self-disclosure were repeated using self-reported self-disclosure instead of verbal self-disclosure and the association between self-reported and observed self-disclosure was examined. Additionally the analysis were conducted while controlling for friendship duration during another exploratory analysis.

Results

The following section presents the descriptive analyses, followed by the main analyses testing the study hypotheses. All multilevel models included a random intercept for dyad to account for the non-independence of participants within dyads.

Descriptive Analyses

After excluding dyads with incomplete data, the final analytic sample consisted of $N = 90$ participants nested in 45 dyads. A total of $n = 5$ participants were excluded because of incomplete data.

Descriptive statistics for the unstandardized self-disclosure variables are presented in Table 1. These variables capture the amount, duration, depth, and breadth of self-disclosure during the conversations.

Table 1

Descriptive Statistics for Unstandardized Self-Disclosure Variables

Variable	M	SD	Min	Max
Number of Self-Disclosure Statements	202	72.9	0	476

Self-Disclosure duration (%)	32.00	10.00	0.00	79.00
Self-Disclosure depth (%)	33.00	16.00	0.00	74.00
Self-Disclosure breadth	10.10	2.02	0.00	13.00

Note. M = mean; SD = standard deviation. Number of Self-Disclosure

Statements is the number of speech units defined as Self-Disclosure per person. Self-disclosure duration indicates the percentage of overall speech units that were coded as self-disclosure per person. Self-disclosure depth indicates the percentage of deep self-disclosure statements relative to all self-disclosure statements per person. Self-disclosure breadth indicates the number of topics addressed per person.

As shown in Table 1, participants produced an average of 202.00 self-disclosure statements ($SD = 72.90$), although the number varied considerably across participants, ranging from 0 to 476 statements. On average, self-disclosure accounted for 32.00% of all speech units ($SD = 10.00$). Approximately one third of self-disclosure statements were coded as deep self-disclosures ($M = 33.00\%$, $SD = 16.00\%$). Participants addressed an average of 10.10 topics ($SD = 2.02$), indicating that self-disclosure was generally distributed across several thematic areas.

Table 2 presents descriptive statistics for verbal emotional support statements. The variables indicate the total number of emotional support statements as well as the number of highly supportive, moderately supportive, and distancing statements.

Table 2*Descriptive Statistics for Verbal Emotional Support Statements*

Variable	M	SD	Min	Max
Emotional Support Statements	93.30	43.30	4	240
Highly Supportive Statements	37.50	27.00	0.00	138.00
Moderately Supportive Statements	55.80	29.00	4.00	166.00
Distancing Statements	0.08	0.40	0.00	3.00

Note. Values represent counts of statements. M = mean; SD = standard deviation.

As shown in Table 2, participants produced an average of 93.30 emotional support statements ($SD = 43.30$). Most statements were coded as moderately supportive ($M = 55.80$, $SD = 29.00$) or highly supportive ($M = 37.50$, $SD = 27.00$), whereas distancing statements occurred rarely ($M = 0.08$, $SD = 0.40$).

Table 3 presents descriptive statistics for nonverbal supporter behavior. The variables describe nodding, looking away, and attentional behavior during the interactions.

Table 3*Descriptive Statistics for Nonverbal Supporter Behavior*

Variable	M	SD	Min	Max
Nodding (%)	57.50	27.40	0.00	100.00
Averting the gaze (%)	13.80	16.30	0.00	66.70

Distancing attentive behavior (%)	2.42	12.60	0.00	100.00
Moderately attentive behavior (%)	89.70	23.20	0.00	100.00
Highly attentive behavior (%)	7.9	20.40	0.00	100.00

Note. M = mean; SD = standard deviation. Values are reported as percentages.

Nodding and looking away represent the percentage of 30-s chunks in which the behavior occurred. Attentive behavior variables describe the percentage of supporter-role behavior coded as distancing, moderately attentive, or highly attentive.

As shown in Table 3, nodding occurred in 57.50% of the 30-s intervals on average ($SD = 27.40$), whereas averting the gaze occurred less frequently ($M = 13.80\%$, $SD = 16.30$). Most intervals were coded as moderately attentive behavior ($M = 89.70\%$, $SD = 23.20$). Highly attentive behavior occurred in 7.90% of intervals on average ($SD = 20.40$), whereas distancing attentive behavior was rare ($M = 2.42\%$, $SD = 12.60$).

Pearson correlations are presented in Table 4 to examine the associations among the standardized variables used to construct the self-disclosure and emotional support, as well as the indices themselves.

Table 4

Pearson Correlations Among Standardized Index Variables

Variable	M	SD	SD Overall	ES Overall	ES Nonverbal	ES Verbal
SD Overall	0.00	1.00	—			
ES Overall	0.00	1.00	.13	—		
ES Nonverbal	0.00	1.00	.37***	.41***	—	
ES Verbal	0.00	1.00	-.06	.86***	-.11	—

Note. N = 90. ES = Emotional Support, SD = Self-Disclosure. Values are Pearson correlation coefficients. All variables were z-standardized before analysis. * $p < .05$.

** $p < .01$. *** $p < .001$.

Table 4 presents Pearson correlations among the standardized index variables. Self-disclosure overall was correlated with emotional support overall, $r = .13$, with nonverbal emotional support, $r = .37, p < .001$, and with verbal emotional support, $r = -.06$. Emotional support overall was correlated with nonverbal emotional support, $r = .41, p < .001$, and with verbal emotional support, $r = .86, p < .001$. Nonverbal emotional support was not significantly negatively correlated with verbal emotional support, $r = -.11$.

Descriptive statistics and bivariate correlations among the central study variables are presented in Table 5. The table includes means and standard deviations for the main variables as well as their zero-order correlations.

Table 5

Means, Standard Deviations, and Correlations Among Study Variables

Variable	M	SD	Self-Disclosure	Emotional Support	Meaningfulness
Self-Disclosure	0.00	1.00	-		
Emotional Support	0.00	1.00	.13	-	
Meaningfulness	5.34	1.17	.05	.05	-

Note. Self-disclosure and emotional support were z-standardized.

Meaningfulness was measured on the original scale.

Self-disclosure showed a small positive correlation with perceived meaningfulness, $r = .05$. Emotional support was weakly correlated with perceived meaningfulness, $r = .05$. Self-disclosure and emotional support were also weakly associated with each other, $r = .13$. Due to the dyadic nature of the data, these correlations should be interpreted descriptively only. The following main analyses therefore used multilevel models to account for the nested structure of participants within dyads.

Main Analyses

For all main analyses, statistical significance was evaluated at an alpha level of .05, and 95% confidence intervals were used. Before interpreting the hypothesis tests, model assumptions were examined for all linear mixed-effects models.

Assumption Checks

Model assumptions were examined for all linear mixed-effects models. Residuals-versus-fitted plots did not indicate substantial deviations from linearity or homoscedasticity, and Q–Q plots suggested approximately normally distributed residuals. Variance inflation factors were below 1.20 across all models, indicating no problematic multicollinearity. Influential cases were assessed using Cook’s distance. Three potentially influential cases were detected in the model testing H2. However, a sensitivity analysis excluding these cases did not change the substantive interpretation of the results, and the full model was retained. Adjusted intraclass correlation coefficients ranged from .120 to .345, supporting the inclusion of random intercepts for dyads. One singular model fit was detected for H1. The dyad-level random intercept variance was estimated as zero, indicating that the random intercept did not explain additional variance in self-disclosure. Overall, these checks did not indicate

major violations of model assumptions. Therefore, the planned hypothesis tests were interpreted as specified.

Age as a Predictor of Self-Disclosure and Emotional Support

Table 6 presents the results of the linear mixed-effects models testing H1 and H2, examining whether age predicted self-disclosure and emotional support. Age and gender were included as fixed effects, and dyad was included as a random intercept. The models examined whether older participants showed higher levels of self-disclosure and emotional support during the conversation.

Table 6

Linear Mixed-Effects Models Predicting Self-Disclosure and Emotional Support from Age

Variable	b	SE	95% CI	df	t	p
Self-Disclosure						
Intercept	0.018	0.167	[-0.314, 0.350]	87.00	0.106	.916
Age	-0.046	0.111	[-0.265, 0.174]	87.00	-0.411	.682
Gender	-0.031	0.223	[-0.473, 0.412]	87.00	-0.138	.891
Emotional Support						
Intercept	-0.384	0.172	[-0.721, -0.047]	67.50	-2.236	.029
Age	-0.076	0.122	[-0.314, 0.163]	45.40	-0.622	.537
Gender	0.665	0.216	[0.242, 1.089]	86.10	3.078	.003

Note. b = unstandardized regression coefficient; SE = standard error; CI = confidence interval. Age, Self-disclosure and emotional support were z-standardized before analysis. Gender was dummy coded with men as the reference category and women

coded as 1. Marginal R^2 was .003 for the self-disclosure model and .107 for the emotional-support model. The p values for age are one-tailed according to the directional hypotheses ($b > 0$); all other p values are two-tailed. Confidence intervals are two-sided 95% confidence intervals.

Results indicated that age was not significantly associated with self-disclosure ($p = .682$). There was no significant effect of gender found ($p = .891$). Thus, H1 was not supported. Similarly, age was not significantly associated with emotional support ($p = .537$). However, gender significantly predicted emotional support ($p = .003$). The positive gender coefficient indicated higher emotional support scores among women than men. Because the expected positive age effect was not found, H2 was not supported.

Age as a Predictor of Perceived Meaningfulness

To test H3, perceived meaningfulness was regressed on age while controlling for gender using a multilevel model. A random intercept for dyads was included to account for the non-independence of participants within dyads. The results are shown in Table 7.

Table 7
Linear mixed-effects model of age predicting perceived Meaningfulness

Variable	b	SE	95% CI	df	t	p
Intercept	5.382	0.201	[4.987, 5.777]	64.1	26.715	<.001
Age	-0.25	0.138	[-0.521, 0.02]	44.8	-1.812	.077
Gender	-0.065	0.261	[-0.577, 0.447]	81.4	-0.248	.805

Note. b = unstandardized regression coefficient; SE = standard error; CI = confidence interval. Age was z-standardized. Gender was dummy coded with men as the reference category and women coded as 1. Marginal $R^2 = .050$. The p value for age is one-tailed according to the directional hypothesis ($b > 0$); all other p values are two-tailed. Confidence intervals are two-sided 95% confidence intervals.

As shown in Table 7, age was not a significant positive predictor of perceived meaningfulness ($p = .077$). Gender was also not a significant predictor of perceived meaningfulness ($p = .805$). Thus, the expected positive association between age and perceived meaningfulness was not found. H3 was therefore not supported.

Actor and Partner Effects of Emotional Support on Perceived Meaningfulness

After examining age as a predictor of individual-level outcomes, the following analyses focused on dyadic actor and partner effects. To test H4, an actor–partner interdependence model was estimated with perceived meaningfulness as the dependent variable, while controlling for gender and age. The results are displayed in Table 8.

Table 8*H4: Actor and Partner Effects of Emotional Support on Meaningfulness*

Variable	b	SE	95% CI	df	t	p
Emotional support (Actor)	-0.026	0.129	[-0.278, 0.226]	84.7	-0.204	.581
Emotional support (Partner)	0.297	0.122	[0.057, 0.537]	84.3	2.427	.009
Age	-0.244	0.136	[-0.509, 0.022]	44.3	-1.796	.079
Gender	-0.072	0.269	[-0.599, 0.455]	79.2	-0.268	.790

Note. Values represent unstandardized regression coefficients (b) from a linear mixed-effects Actor–Partner Interdependence Model. Emotional support was z-standardized before analysis. Emotional support for actor and partner as well as age was z-standardized. Gender was dummy coded with men as the reference category and women coded as 1. Marginal $R^2 = .154$. The p values for actor and partner emotional support are one-tailed according to the directional hypotheses ($b > 0$); all other p values are two-tailed. Confidence intervals are two-sided 95% confidence intervals.

As shown in Table 8, actor emotional support was not significantly associated with perceived meaningfulness ($p = .581$). However, partner emotional support was significantly and positively associated with perceived meaningfulness ($p = .009$). These findings partially support H4.

Interaction between Actor Self-Disclosure and Partner Emotional Support

Building on the partner effect tested in H4, a second actor–partner interdependence model was estimated to test H5. This model examined whether partner emotional support moderated the association between actor self-disclosure and perceived meaningfulness. Actor self-disclosure, partner emotional support, their interaction, age, and gender were entered as predictors. The results are displayed in Table 9.

Table 9

Moderation of the Association Between Actor Self-Disclosure and Perceived Meaningfulness by Partner Emotional Support

Variable	b	SE	95% CI	df	t	p
Self-Disclosure (Actor)	0.060	0.125	[-0.184, 0.304]	78.73	0.483	.315
Emotional Support (Partner)	0.336	0.123	[0.095, 0.576]	81.95	2.737	.004
Self-Disclosure × Partner Emotional Support	0.178	0.103	[-0.023, 0.379]	83.83	1.731	.044
Age	-0.235	0.132	[-0.494, 0.025]	43.47	-1.772	.083
Gender	-0.032	0.254	[-0.530, 0.466]	80.35	-0.126	.900

Note. Values represent unstandardized regression coefficients (b) from a linear mixed-effects Actor–Partner Interdependence Model. Self-disclosure and emotional support and age were z-standardized before analysis. Gender was dummy coded with men as the reference category and women coded as 1. Marginal $R^2 = .135$. The p values for actor self-disclosure, partner emotional support, and their interaction are one-tailed according to the directional hypotheses ($b > 0$); all other p values are two-tailed. Confidence intervals are two-sided 95% confidence intervals.

As shown in Table 9, actor self-disclosure was not significantly associated with perceived meaningfulness ($p = .315$). Partner emotional support was significantly and positively associated with perceived meaningfulness ($p = .004$). There was a positive and significant interaction between actor self-disclosure and partner emotional support found ($p = .044$). Neither age ($p = .083$) nor gender ($p = .900$) was significantly associated with meaningfulness. Partner emotional support significantly moderated the association between actor self-disclosure and perceived meaningfulness. H5 was therefore supported.

Exploratory Analysis

Friendship Duration as an Exploratory Robustness Check

As an exploratory robustness check, friendship duration was added as a standardized control variable to all five hypothesis models. Overall, including friendship duration did not substantially alter the pattern of findings.

Friendship duration was not significantly associated with self-disclosure, $b = 0.11$, $p = .474$, or emotional support, $b = -0.17$, $p = .316$, and showed only a marginal association with perceived meaningfulness in the direct-effects model, $b = 0.34$, $p = .075$. However, friendship duration significantly predicted perceived meaningfulness in the actor-partner model, $b = 0.38$, $p = .044$, and in the moderation model, $b = 0.38$, $p = .041$. Full model estimates are reported in Appendix D.

Alternative Self-Disclosure Measure as an Exploratory Sensitivity Analysis

As an exploratory sensitivity analysis, the models involving self-disclosure were rerun using the results of the self-report questionnaire “Self-Disclosure Index”

by Miller et al. (1983) instead of the original self-disclosure scale. Age still did not significantly predict self-disclosure, $b = -0.05$, $p = .675$. The interaction between self-disclosure and partner emotional support however was nonsignificant, $b = -0.09$, $p = .814$. The effect of partner emotional support on meaningfulness remained significant $b = 0.26$, $p = .017$. The standardized Self-Disclosure Index showed a significant positive main effect on perceived meaningfulness, $b = 0.38$, $p = .001$. Full model estimates are reported in Appendix D.

Because of these results, a correlation analysis was conducted, and it was found that the standardized self-disclosure index was not significantly correlated with the verbal self-disclosure measurement, $r = .08$, $p = .451$, 95% CI $[-0.13, .28]$.

Discussion

The present study examined associations between self-disclosure, emotional support, age and perceived meaningfulness in close friendships, with particular attention to actor and partner effects. Overall, the findings provide partial support for the hypotheses. Age was not significantly associated with the study variables, but partner emotional support and the interaction between self-disclosure and partner emotional support emerged as relevant correlates of perceived meaningfulness.

Age and Conversational Processes

The present study found that age did not significantly predict observed self-disclosure, observed emotional support, or perceived meaningfulness. Thus, the age-related hypotheses were not supported. However, the present results should not be

interpreted as evidence against Socioemotional Selectivity Theory, as the study provided only a limited test of age-related differences across adulthood.

Socioemotional Selectivity Theory proposes that age-related changes in perceived future time are associated with shifts in social goals and partner preferences, but it does not necessarily imply that older adults should show higher levels of self-disclosure or emotional support in every conversation (Carstensen et al., 1999). In the present study, dyads consisted of friends and were instructed to discuss personal development, which may have created a context in which participants across age groups engaged in relatively personal and meaningful conversation. One possible interpretation is that age may be less relevant for how much friends disclose or support each other when they have already established a friendship. Age-related differences may therefore be more likely to emerge in the selection of interaction partners, the frequency of meaningful interactions, or the subjective prioritization of emotional goals than in the observed behavior within this specific laboratory task (Carstensen et al., 1999).

The educational composition of the sample also warrants consideration. Individuals whose highest level of education was compulsory schooling were strongly underrepresented, comprising just 1.1% of the sample despite accounting for a substantially larger share of the Austrian adult population (Statistik Austria, 2023). This may have restricted variability in social or conversational resources relevant to self-disclosure, emotional support, and perceived meaningfulness. If education is associated with socioemotional competencies, as suggested by Suberviola (2025), the present findings may partly reflect the selective nature of the sample rather than the complete absence of age-related differences.

The findings therefore raise the broader question of which sample characteristics and conversational contexts are most suitable for detecting age-related differences in meaningful social interactions. The present results therefore suggest that future research should examine age-related processes in larger and more representative samples, ideally including measures of perceived future time, relationship selection, and naturally occurring social interactions.

Emotional Support and Perceived Meaningfulness

The dyadic analysis provided evidence that partner emotional support was associated with perceived meaningfulness. This pattern partially supports the hypothesis and aligns with the Interpersonal Process Model of Intimacy, which emphasizes the role of responsive behavior from the interaction partner. Notably, emotional support was significantly associated with perceived meaningfulness only at the partner level, suggesting that conversations may feel more meaningful when individuals receive emotional support from their friend, rather than when they themselves provide it.

These finding highlights that, while emotional support may play an important role in the perception of meaningfulness, it matters whether one is in the role of being supported or being supportive (Reis & Shaver, 1988). This result is consistent with dyadic perspectives on interpersonal interaction, as the psychological outcome of a conversation may be shaped not only by one's own behavior, but also by how the interaction partner responds (Lacombe et al., 2026).

However, caution is warranted in interpreting meaningfulness as a substitute for intimacy. While the present findings suggest that theoretical assumptions from the Interpersonal Process Model of Intimacy translate well to the context of perceived

meaningfulness, indicating that this conceptual adaptation was appropriate, they do not establish that meaningfulness and intimacy are interchangeable constructs.

Interaction between Emotional Support and Self-Disclosure

The hypothesis concerning the interaction between self-disclosure and emotional support was supported. Higher actor self-disclosure was associated with greater perceived meaningfulness only when partner emotional support was high. This finding is consistent with the Interpersonal Process Model of Intimacy, which suggests that disclosure becomes meaningful in the context of responsive partner behavior. In friendships, self-disclosure can involve vulnerability and social risk while emotionally supportive responses may signal acceptance, understanding, and care (Omarzu, 2000). This interaction suggests that self-disclosure was not meaningful in itself. Rather, disclosure appeared to be associated with greater meaningfulness when the partner responded with emotional support. This pattern supports a dyadic interpretation of meaningfulness as emerging from reciprocal conversational responsiveness rather than from individual disclosure alone.

This interpretation is consistent with research on self-disclosure in friendships. Costello et al. (2024) described self-disclosure as the sharing of personal or private information that allows the interaction partner to know the speaker more deeply, while also emphasizing that vulnerable disclosures can carry social risk. In close friendships, such disclosures may create opportunities for responsiveness, emotional support, and closeness.

These findings may also have practical implications. They suggest that psychoeducation, communication training, or interventions aimed at improving relationship quality and reducing loneliness could focus on supportive listening and emotionally responsive behavior. Concrete targets may include attentive listening,

validation, expressions of care, and responses that convey understanding rather than dismissal. This focus aligns with work indicating that supportive responses to self-disclosure are linked to relationship satisfaction, whereas insensitive responses may intensify emotional distress (Leaper, 2019). The present findings are consistent with previous research suggesting that emotional support can be beneficial across different interpersonal contexts (Lacombe et al., 2026).

Exploratory Analysis

The exploratory analyses provided additional information about the robustness and interpretation of the main findings. Including friendship duration as a control variable did not substantially change the central findings, suggesting that the main results were not simply explained by how long participants had known each other. At the same time, friendship duration was positively associated with perceived meaningfulness in the actor-partner models. This suggests that longer friendships may provide a relational context in which conversations are experienced as more meaningful, possibly because they involve greater trust, shared history, and familiarity with each other's emotional needs (Costello et al., 2024).

The analysis using the self-report Self-Disclosure Index showed a different pattern than the observational self-disclosure measure. Although age still did not significantly predict self-disclosure and emotional support remained significantly associated with meaningfulness, self-reported self-disclosure was positively and significantly associated with perceived meaningfulness as well. This change in results could stem from the fact that the self-report measure was not significantly correlated with the observational measure, suggesting that the two measures captured different aspects of self-disclosure. Whereas the observational measure reflected disclosure

behavior during the specific conversation, the self-report measure may have captured broader self-perceptions or habitual disclosure tendencies. It is therefore possible that the perceived self-disclosure rather than the observed self-disclosure can contribute to meaningful conversations.

Strengths

Despite its limitations, the present study has several notable strengths. Its dyadic design allowed for the examination of interdependent communication processes in friendships. The use of the Actor–Partner Interdependence Model provided a nuanced representation of interpersonal processes by distinguishing between participants’ own behavior and their friend’s behavior. Additionally, the use of observed friendship conversations allowed interpersonal behavior to be assessed as it unfolded within an actual interaction rather than relying solely on retrospective self-report. The inclusion of sensitivity analyses allowed for a more differentiated interpretation of the robustness of the findings. Another strength is the inclusion of the exploratory analysis as it allows insight into the differences of self-reported and observed self-disclosure as well as the role of friendship duration in conversation meaningfulness between friends. The multimethod design provided a comprehensive perspective on participants’ behavior and experiences.

Limitations and Future Directions

Despite its strengths, several limitations should be considered when interpreting the findings. The relatively small sample size limited the statistical power of the analyses, particularly for detecting small effects and interaction effects in the

actor–partner models. Therefore, nonsignificant findings, especially the age-related effects, should be interpreted cautiously.

Additionally, the convenience sample limits the representativeness of the findings, particularly with respect to education and age. Participants with compulsory education as their highest level of education were underrepresented, and the sample was skewed toward younger adults. Future research should aim to recruit larger and more diverse samples with respect to age, education, and gender.

Another limitation lies with the challenges presented by measurement and coding of conversational behavior. Four members of the research team participated in the live coding of interactions, and although inter-rater reliability was acceptable, differences in coding style were apparent. Future studies should use more standardized coding guidelines and thoroughly pilot the full coding procedure before data collection. The coding of self-disclosure was especially challenging because the depth or intimacy of disclosure can be subjective. For example, a topic that appears minor to an observer may be highly personal or distressing for the participant. Future research could therefore combine observer ratings with participants' own evaluations of how personal or vulnerable their disclosures felt.

Finally, the multimethod design, while promising, may not fully capture the diversity of how people express self-disclosure and emotional support. Future research should therefore consider whether commonly used indicators of emotional support and self-disclosure are equally valid across different communication styles, cultural backgrounds, and neurotypes.

Conclusion

The present study examined perceived meaningfulness in conversations between friends using a dyadic, multimethod design. Although the age-related hypotheses were not supported, the findings highlight the relevance of partner emotional support for perceived meaningfulness. Conversations were perceived as more meaningful when friends expressed higher levels of emotional support, particularly in the context of higher self-disclosure. In contrast, participants' own emotional support was not significantly associated with their own perceived meaningfulness. These findings underscore the importance of considering dyadic processes when studying meaningful social interactions. Overall, the study contributes to research on friendship communication by providing evidence that meaningfulness in conversation may depend not only on what individuals disclose themselves, but also on how emotionally responsive their friends are.

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Appendix A

Demographic Questions

1. Welchem Geschlecht ordnen Sie sich zu?
 - a. Weiblich
 - b. Männlich
 - c. nicht-binär/ genderqueer
 - d. kein Geschlecht
 - e. keine Angabe
2. Welcher der folgenden Begriffe beschreibt Ihre sexuelle Orientierung am besten?
 - a. Heterosexuell
 - b. Schwul oder lesbisch
 - c. Bisexuell oder pansexuell
 - d. Keine sexuelle Orientierung
 - e. Keine Angabe
3. Wie alt sind Sie?
 - a. __ Jahre
4. Wo wohnen Sie?
 - a. In Wien
 - b. In einem anderen Bundesland Österreichs
 - c. Im Ausland
5. Wie gut sind Ihre Deutschkenntnisse?
 - a. Sehr gute Kenntnisse
 - b. Gute Kenntnisse
 - c. Grundkenntnisse

6. Haben Sie Kinder (auch Stiefkinder)?
- a. Ja
 - b. Nein
 - c. Wenn ja, wie viele Kinder haben Sie?
 - d. Wenn ja, wie viele davon sind jünger als 18 Jahre?
7. Wie viele Personen wohnen mit Ihnen in einem gemeinsamen Haushalt?
(Schreiben Sie „0“, wenn Sie alleine wohnen).
8. Was ist Ihr höchster Bildungsabschluss?
- a. Kein Schulabschluss
 - b. Pflichtschule
 - c. Lehre
 - d. Matura/Abitur
 - e. Universitäts-/Fachhochschulabschluss
9. Welche der folgenden Beschreibungen passen zu Ihrer aktuellen Situation?
Bitte wählen Sie alle Optionen aus, die zutreffen.
- a. Erwerbstätig oder Lehrling
 - b. Arbeitssuchend / arbeitslos
 - c. In Pension
 - d. Dauerhaft arbeitsunfähig aus gesundheitlichen Gründen
 - e. In Ausbildung (z. B. Schule, Studium)
 - f. Zivil- oder Präsenzdienst
 - g. In Elternkarenz oder Mutterschutz
 - h. Mit Hausarbeit, der Betreuung von Kindern oder von anderen Personen beschäftigt

10. Falls Sie mehrere Auswahlmöglichkeiten gewählt haben: Welche dieser Beschreibungen trifft am besten auf Ihre aktuelle Situation zu? Bitte wählen Sie nur eine Option aus.
- a. Erwerbstätig oder Lehrling
 - b. Arbeitssuchend / arbeitslos
 - c. In Pension
 - d. Dauerhaft arbeitsunfähig aus gesundheitlichen Gründen
 - e. In Ausbildung (z. B. Schule, Studium)
 - f. Zivil- oder Präsenzdienst
 - g. In Elternkarenz oder Mutterschutz
 - h. Mit Hausarbeit, der Betreuung von Kindern oder von anderen Personen beschäftigt

Appendix B

Questionnaire Measures

Meaningfulness

Wie wichtig war diese Interaktion für Sie?

extrem unwichtig (1) - extrem wichtig (7)

Wie bedeutungsvoll war diese Interaktion für Sie?

extrem sinnlos (1) - extrem sinnvoll (7)

Self-Disclosure Index (Miller et al., 1983)

Inwieweit sprechen Sie mit %friendname% über die folgenden Themen?

Überhaupt nicht (0) – Sehr Oft (5)

1. Ihre persönlichen Gewohnheiten
2. Dinge, die Sie in der Vergangenheit getan haben und für die Sie sich schuldig fühlen
3. Dinge, die Sie in der Öffentlichkeit nicht tun würden
4. Ihre tiefsten Gefühle
5. Was Sie an sich mögen und was Sie an sich nicht mögen
6. Was für Sie und Ihr Leben wichtig ist
7. Was wichtig ist, damit Sie Sie selbst sein können
8. Die Dinge, die Sie am meisten fürchten
9. Dinge, auf die Sie stolz sind
10. Ihre engen Beziehungen zu anderen Menschen

Friendship duration

Wie lange sind Sie schon mit %friendname% befreundet?

__Jahre __Monate

Appendix C

Transcript Coding

Each conversational unit was coded independently as self-disclosure (SD), emotional support (ES), or neutral (N). The coding followed a fixed decision sequence. First, coders determined whether the unit was a direct response to a previous self-disclosure by the interaction partner. If it was, the unit was coded as emotional support. If it was not, coders determined whether the speaker referred to their own feelings, experiences, opinions, preferences, values, or personal circumstances. If they did, the unit was coded as self-disclosure. If neither applied, the unit was coded as neutral.

A unit was coded as self-disclosure (SD) if the speaker communicated personal information about themselves. For each SD unit, one topic and one depth code were assigned. Topic categories: physical health, mental health, achievement/performance, education, work, romantic relationship, friendship, family, leisure/hobbies, travel, appearance/style, future plans/dreams, personality/identity, other topics. If several topics applied, health-related content was prioritized first, followed by achievement/performance, education/work, romantic relationships, and then friendship/family.

Depth coding:

0 = superficial self-disclosure: personal facts, preferences, routines, or descriptions without explicit emotional content or vulnerability.

1 = deep self-disclosure: explicit internal states, emotions, fears, insecurities, weaknesses, mistakes, personal values, needs, or convictions.

A unit was coded as emotional support (ES) only if it directly responded to the partner's previous self-disclosure.

ES-HAS = highly active emotional support: the listener added new cognitive or interpretive content, such as elaboration, probing, advice, or reframing.

ES-MS = moderately supportive emotional support: the listener showed attention, understanding, or basic validation, such as backchannels, clarification, acknowledgment, encouragement, or brief similarity statements.

ES-DN = distancing/negative response: the listener ignored, minimized, dismissed, invalidated, or shifted away from the partner's disclosure.

A unit was coded as neutral (N) if it contained neither self-referential personal information nor a direct response to the partner's self-disclosure. This included organizational comments, procedural remarks, factual metacommunication, or non-personal small talk.

Behavioral Coding

The following coding rules were used for the behavioral coding of nonverbal behavior during the conversations. The coding scheme specifies how instances of gaze aversion, interpersonal orientation, and nodding were identified and coded. The rules were refined after an initial double-coding check to increase coding consistency.

Previously coded conversations were subsequently reviewed according to the finalized rules.

Gaze Aversion

Definition. Gaze aversion was coded when a participant looked away from the interaction partner for a clearly identifiable period of time.

The following rules were applied:

1. During the first two minutes in the discloser role, looking at the instruction sheet to reread the question was not coded as gaze aversion.
2. After this initial period, looking at the instruction sheet for more than a brief moment was coded as gaze aversion.
3. Isolated instances of gaze aversion were coded only if they lasted for at least 2 seconds.
4. If a participant looked away briefly several times in succession, these instances were coded as one instance of gaze aversion if the participant looked away at least three times within 90 seconds, even if each individual instance lasted less than 2 seconds.

Review of previously coded conversations.

Previously coded instances of gaze aversion were reviewed according to the stricter final rules. Instances that no longer met the finalized criteria were removed.

Interpersonal Orientation

Definition. Interpersonal orientation refers to changes in the participant's physical orientation toward or away from the interaction partner. A change in interpersonal

orientation was coded when the participant actively reduced or increased the physical distance to the other person.

Examples of increased orientation toward the interaction partner included:

- placing the hands on the table;
- leaning the upper body forward;
- otherwise actively moving closer to the interaction partner.

Examples of decreased orientation or distancing included:

- removing the hands from the table;
- leaning the upper body backward;
- otherwise actively increasing distance from the interaction partner.

The following rules were applied:

1. The initial interpersonal orientation of both participants was coded within the first 60 seconds of the conversation. In most cases, the initial state was coded as moderate orientation.
2. Changes in interpersonal orientation, such as a shift from moderate to high orientation or from moderate orientation to distancing, were coded as precisely as possible.
3. Changes were coded within the correct 10-second interval in which the behavioral change occurred.

Review of previously coded conversations.

Previously coded conversations were reviewed to ensure that the initial orientation of

both participants had been coded within the first 60 seconds. All later codes for high orientation, moderate orientation, or distancing were checked to ensure that they were placed within 10 seconds of the actual behavioral change. If necessary, codes were moved to the correct time interval.

Nodding

Definition. Nodding was coded when a participant moved their head in an upward and downward motion.

The following rules were applied:

1. Clear upward and downward head movements were coded as nodding.
2. Slight nods were also coded if they occurred together with verbally affirming responses.
3. Ambiguous cases were not coded immediately. If coders were unsure whether nodding had occurred, they were instructed not to code the behavior during the first pass. Instead, they noted the approximate minute of the potential nod and reviewed that segment after the conversation had ended.
4. Coders were instructed to ensure that nodding was assigned to the correct participant.
5. Particular attention was paid to the role switch in the middle of the conversation. After completing the coding of each conversation, coders reviewed the period around the role switch to check whether nodding had been coded correctly in terms of both occurrence and participant assignment.

Appendix D

Supplementary Analyses

Table E1

Linear Mixed Models Predicting Self-Disclosure, Emotional Support, and Meaningfulness, controlling for age, gender and friendship duration

Mo del	Outcome	Predictor	b	SE	df	t	p	95% CI
H1	Self-disclosure	Intercept	-0.15	0.17	59.44	-0.87	.388	[-0.49, 0.19]
		Age	-0.08	0.16	42.17	-0.48	.636	[-0.39, 0.24]
		Gender	0.29	0.23	75.05	1.24	.218	[-0.17, 0.74]
		Friendship duration	0.06	0.16	40.95	0.36	.721	[-0.26, 0.37]
H2	Emotional support	Intercept	-0.39	0.17	64.58	-2.24	.028	[-0.73, -0.05]
		Age	0.05	0.17	42.82	0.28	.783	[-0.29, 0.38]
		Gender	0.66	0.22	83.30	3.01	.003	[0.23, 1.10]
		Friendship duration	-0.17	0.17	41.23	-1.01	.316	[-0.51, 0.16]
H3	Meaningfulness	Intercept	5.39	0.20	60.98	27.10	< .001	[5.01, 5.77]

Model	Outcome	Predictor	b	SE	df	t	p	95% CI
	ss	Age	-0.48	0.19	42.14	-2.56	.014	[-0.84, -0.12]
		Gender	-0.09	0.26	78.21	-0.34	.731	[-0.59, 0.42]
		Friendship duration	0.34	0.19	40.81	1.82	.075	[-0.02, 0.70]
H4	Meaningfulness	Intercept	5.41	0.20	60.10	27.20	< .001	[5.02, 5.80]
		Actor						
		emotional support	-0.01	0.13	81.75	-0.06	.950	[-0.26, 0.24]
		Partner						
		emotional support	0.32	0.12	81.25	2.64	.010	[0.08, 0.56]
		Age	-0.50	0.18	41.23	-2.75	.009	[-0.86, -0.14]
		Gender	-0.11	0.27	75.51	-0.41	.685	[-0.63, 0.41]
		Friendship duration	0.38	0.18	40.07	2.08	.044	[0.02, 0.74]
H5	Meaningfulness	Intercept	5.36	0.20	61.33	27.54	< .001	[4.98, 5.74]
		Self-disclosure	-0.00	0.13	80.77	-0.03	.978	[-0.25, 0.24]
		Partner	0.36	0.12	79.98	2.89	.005	[0.12, 0.60]

Mo del	Outcome	Predictor	b	SE	df	t	p	95% CI
		emotional support						
		Age	-0.54	0.18	41.58	-2.96	.005	[-0.89, -0.18]
		Gender (female)	-0.09	0.25	75.81	-0.34	.736	[-0.58, 0.41]
		Friendship duration	0.40	0.18	40.20	2.21	.033	[0.05, 0.75]
		Self- disclosure x partner	0.16	0.11	80.50	1.42	.160	[-0.06, 0.37]
		emotional support						

Note *b* = unstandardized regression coefficient; SE = standard error; df = degrees of freedom; CI = confidence interval. All models were estimated using restricted maximum likelihood (REML) and included a random intercept for dyad to account for the non-independence of participants within dyads. Age and friendship duration were z-standardized before analysis. Gender was dummy coded with men as the reference category and women coded as 1. In H4 and H5, actor–partner interdependence models were estimated; partner emotional support refers to the friend’s emotional-support score. Confidence intervals are two-sided 95% CIs.

Table E2

Exploratory Model Estimates for Hypothesis 1 With the Self-Reported Self-Disclosure Index as the Outcome

Predictor	b	SE	df	t	p	95% CI
Intercept	-0.14	0.18	65.72	-0.78	.440	[-0.48, 0.21]
Age	-0.05	0.12	45.10	-0.42	.663	[-0.29, 0.19]
Gender (female)	0.24	0.23	83.86	1.05	.296	[-0.21, 0.68]

Note. N = 90 observations from 45 dyads. b = unstandardized regression coefficient.

The model was estimated using restricted maximum likelihood with a random intercept for dyad. Gender was included as a control variable and coded with men as the reference category. The *p* values for age are one-tailed according to the directional hypotheses ($b > 0$); all other *p* values are two-tailed.

Table 10

Exploratory Model Estimates for Hypothesis 5 with the Self-Reported Self-Disclosure Index as the Predictor

Predictor	b	SE	df	t	p	95% CI
Intercept	5.47	0.20	64.68	27.79	< .001	[5.09, 5.86]
Self-Disclosure Index	0.38	0.12	84.00	3.15	.001	[0.14, 0.62]
Partner Emotional Support	0.26	0.12	82.83	2.14	.017	[0.02, 0.49]
Age	-0.22	0.14	43.53	-1.60	.116	[-0.48, 0.05]

Predictor	b	SE	df	t	p	95% CI
Gender	-0.20	0.25	81.82	-0.81	.421	[-0.69, 0.29]
Self-Disclosure Index × Partner emotional support	-0.09	0.10	80.88	-0.90	.814	[-0.30, 0.11]

Note. N = 90 observations from 45 dyads. b = unstandardized regression coefficient.

The model was estimated using restricted maximum likelihood with a random intercept for dyad. The interaction term tested whether the standardized self-disclosure index moderated the association between partner emotional support and perceived meaningfulness. Gender was coded with men as the reference category. The *p* values for actor self-disclosure, partner emotional support, and their interaction are one-tailed according to the directional hypotheses ($b > 0$); all other *p* values are two-tailed.