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Interdependencies between family and friends in daily life: Personality differences and associations with affective well-being across the lifespan

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Abstract

Family and friends are central to human life and well-being. Most people maintain both family and friendship relationships and these relationships might show interdependencies that have scarcely been addressed. We examined the relative frequency of daily contact with family and friends (i.e. friends/family-contact) and its link with personality traits and affective well-being. In an experience sampling study with 396 participants (M_{age}= 40 years, range 14–88 years, 52% females), we studied how friends/family-contact was associated with Big Five traits and affective well-being across six daily measurements on nine days (average of 55 assessments). Most participants reported more daily contact with family than friends (i.e. held a family orientation), but individual differences were substantial, moderately stable over time, and largely independent from Big Five traits. With advancing age, participants were relatively more often with friends than family. Furthermore, participants were happier when they were with friends compared to family, and this effect was even stronger with higher extraversion. We discuss how examining friends/family-contact extends previous knowledge on personality differences in social relationships, and how this concept yields promising, yet challenging, future directions in personality-relationship associations.

Keywords

Big five, social relationships, friends-family-interdependence, well-being, lifespan

Daily social interactions are intimately coupled with differences in physical and mental health, well-being and longevity (e.g. Bernstein et al., 2018; Berscheid & Reis, 1998; Diener et al., 2018; Sun et al., 2019). In general, people feel happier when spending time with family or friends compared to being with other people or alone (Hudson et al., 2020; Nezlek et al., 1994; White & Dolan, 2009). Individual differences and preferences for certain types of relationships (e.g. family or friends) may influence the affective outcomes of the company we seek. Some people understand themselves as 'family people' and report that family time is most important to them. Others place greater emphasis on their friendships. As most people maintain relationships with both family and friends (for reviews see Wrzus et al., 2013; Wirzus & Wagner, 2018), the orientation more towards family or friends is likely a continuum with large individual differences between people (Fiori et al., 2007; Wrzus et al., 2012).

The current study expands on previous studies, which have mainly focused on specific relationships separately (e.g. friends, parents) and assessed relationships once, through an experience sampling design to examine the interdependence between family and friendship contacts in daily life. Furthermore, we studied how individual differences in the orientation towards family or friends are associated with Big Five traits and age, in a lifespan sample. Finally, we

examined the link between the orientation towards family or friends and affective well-being in social company.

We focused on friends and family members, as most people have such relationships, while this is not true for romantic partnerships – especially, when considered from a lifespan perspective (PEW Research Center, 2017; Scheling

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& Richter, 2021; Statista, 2020). While family refers to relatives related through kinship or law (e.g. daughter or daughter-in-law), friends are non-kin in people's personal networks, which are generally characterized through voluntariness, positivity and reciprocity of the relationship (Argyle & Henderson, 1985; Blieszner & Roberto, 2004; Neyer et al., 2011). Both friends and family provide intimacy and support and share achievements and losses (Mund & Neyer, 2014; Neyer et al., 2011; Slavich, 2020). Accordingly, friends and family members are the closest and most important relationships for most people aside from romantic partners (Mund & Neyer, 2014; Neyer et al., 2011).

Friends-family-interdependence

People have an innate 'need to belong' to other people, that is, to form and maintain close relationships with others (i.e. affiliation motivation, see Baumeister & Leary, 1995; Hofer & Hagemeyer, 2018; La Guardia & Patrick, 2008; McClelland, 1986; Murray, 1938). The need to belong or an affiliation motive differs in strength between people and can be satisfied in different kinds of relationships such as family relationships or friendships (see Baumeister & Leary, 1995; McClelland, 1986). People are limited in their time and energy, which makes relationships often interdependent (Fiori et al., 2017; Klärner et al., 2016; Rözer et al., 2016). That is, spending time on and maintaining certain relationships usually leads to having less time and energy for other relationships. In general, people have about five close relationships they have contact with at least once a week, and typically 20 individuals whom they see at least monthly (Dunbar, 2010; van der Gaag et al., 2005). Importantly, people differ in whether these individuals are mainly family, friends or both (CBS Statistics Netherlands, 2015; Fiori et al., 2007). Yet, causes and consequences, or at least correlates, of such a focus on family or friends are scarcely studied and even less understood. Most research does not take the potential interdependence between family and friend relations into account, but rather, focuses on one relationship type at a time, that is, either family or friend relationships (e.g. TOC in Berscheid & Regan, 2005; specialised handbooks such as Hojjat & Moyer, 2017).

Previous studies support the idea that family relationships and friendships are interdependent: People who reported fewer family members in their personal network named relatively more friends, and vice versa (Rözer et al., 2016; Wrzus et al., 2012). In addition, less emotional closeness with family was associated with relatively higher emotional closeness with friends (Wrzus et al., 2012). In contrast, frequency of contact with family members was not significantly associated with the contact frequency with friends (Wrzus et al., 2012). This unexpected absence of interdependence may be due to recall bias, as the studies relied on retrospective reports of average contact instead of directly assessing daily interactions. People might not accurately remember how often they saw their family and friends, and answer categories might have been too broad (e.g. once a month or less). To understand whether the frequency of contact with family is related to the frequency of contact with friends, assessment methods with little recall bias are needed, such as experience sampling methods (ESM, Bolger et al., 2003).

We specifically focused on frequency of contact. A social network study showed that having relatively more family members in the personal network was associated with more active involvement (i.e. contact) with family members (Rözer et al., 2016), suggesting that not only quality but also contact frequency is relevant for interdependence between family and friendship contact. Furthermore, a recent event-based experience sampling study on social interactions supported the assumption of interdependencies among family and friends and demonstrated that participants, who spent more time with friends, were less likely to spend time with family members ($r = -0.74$; Mueller et al., 2019). We therefore expect that *(H1) people who are more often with friends, are less often with family.*

Personality differences in friends-family-interdependence

Personality differences could be helpful to identify which individuals are less or more friendship-oriented. Research into personality differences in social relationships also focused on specific relationships (thus friendships *or* family relationships), yet might still help to explain why certain people choose to be more often with either family or friends (Back et al., 2011; Harris & Vazire, 2016). Each of the five personality factors may be related to friends/family-contact: People higher in extraversion, for example, report higher quality of friendships and better social skills, and they spend more time with friends than with family (Harris & Vazire, 2016, 2017; Lucas et al., 2008; Van Zalk et al., 2010; Wagner et al., 2014; Wrzus et al., 2016a). In addition, more extraverted people are more sociable and have more social contact in general, which enables them more opportunities to socialise. In contrast, people who score lower on extraversion prefer to spend more of their time alone (see Breil et al., 2019; Harris and Vazire, 2016; 2017). This extraverted sociability may make it more likely for people to be in social company in general (i.e. both family and friends, which has been summarised as the sociability hypothesis, Lucas et al., 2008; McCabe & Fleeson, 2012). While this general sociability of more extraverted people is well-studied, we examined the association between extraversion and being with friends versus family relationships. We therefore expected that *(H2a) with higher extraversion, people are more often with friends rather than family.*[1]

Agreeableness taps into the tendency to be kind and cooperative and to display altruistic behaviour (Denissen & Penke, 2008). More agreeable people are less likely to actively seek out new friendships, but they generally do get along with people better (Harris & Vazire, 2016). This results in high popularity and larger social networks (Harris & Vazire, 2016; Wagner et al., 2014). More agreeable people are more often chosen as friends and tend to reciprocate those friendships over time (Van Zalk et al., 2010). As people invest more time in friendships, this could be at the cost of family relationships. We therefore expected that *(H2b) with higher agreeableness, people are more often with friends rather than family.*

Open-mindedness is defined as enjoying cognitive activity and new experiences (Denissen & Penke, 2008). More open-minded people generally have larger friendship networks (Wagner et al., 2014) and seek out more people for stimulation (Harris & Vazire, 2016), yet, they are not necessarily closer with network members (Mund & Neyer, 2014). When people are with friends, they are more likely to experience new activities than with family (Hudson et al., 2020), which should appeal more to open-minded people. We therefore expected that *(H2c) with higher open-mindedness, people are more often with friends rather than family.*

Neuroticism refers to emotional instability and sensitivity to signs of social exclusion (Denissen & Penke, 2008). People who score higher on neuroticism are less comfortable during interactions with strangers (Cuperman & Ickes, 2009; Harris & Vazire, 2016), are more insecure in friendships, have a lower friendship satisfaction, have fewer friends and feel less close to network members in general (Lang et al., 1998). Family relationships could be seen as more familiar and safe. We therefore expected that *(H2d) with higher neuroticism, people are more often with family rather than friends.*

Conscientiousness refers to the tendency to pursue goals and prefer structure (Denissen & Penke, 2008). With higher conscientiousness, people are usually more reliable and trustworthy, and this might result in better friendship outcomes (Harris & Vazire, 2016). However, conscientiousness mainly involves task-related, rather than social behaviours (Roberts et al., 2014; Soto & John, 2017), and a higher sense of duty might also result in more family contact. We therefore expected that *(H2e) conscientiousness is not significantly related to being more often with family or with friends.*

Age differences in friends-family-interdependence

In addition to personality differences, social relationships also vary across the lifespan. Friendship networks increase in size over adolescence and young adulthood, but the number of friends steadily decreases in later adulthood, whereas the number of and contact with family relationships remains much more constant (Carstensen & Turk-Charles, 1994; Kalmijn, 2003; Lang et al., 1998; Sander et al., 2017; Wrzus et al., 2013). While in retrospective reports, contact frequency with friends and acquaintances decreased continuously with age (CBS Statistics Netherlands, 2015; Sander et al., 2017), momentary assessments of contact with friends showed non-linear patterns (Wrzus et al., 2016); adolescents, young adults and older adults were more often together with friends in daily life compared to middle-aged adults. In another study with 136 adults aged 18–89 years, no significant (linear) associations were found between age and the frequency of social interactions with family or friends in daily life (Mueller et al., 2019).

These studies, however, looked at the relationship types separately, while we were interested in the relative frequency of contact with friends and family. This is important because it allowed us to control for general sociability effects. As the friendship network increases until young adulthood, this might result in fewer family interactions. After marriage and parenthood, contact with friends generally decreases and the extended family often becomes more involved again (Kalmijn, 2003). We thus expected that *(H2f) up until young adulthood, people will spend more time with friends compared to family, while after young adulthood, people will spend more time with family compared to friends.*

Based on previous research, we assumed that age also moderates effects of extraversion and open-mindedness on friends-family-interdependence. Extraversion might be most important regarding when and how friendships are formed (Lehmann et al., 2013; Van Zalk et al., 2020). During adolescence and young adulthood, establishing peer relationships is an important developmental task. Higher extraversion provides better opportunities for social interaction. Accordingly, the association between extraversion and being with friends was stronger among younger people compared to older people (Wrzus et al., 2016b). We therefore expected *(H2g) the effect of extraversion on friends/family-contact to be more pronounced in younger adulthood.*

The effects of open-mindedness might also differ with age. Older adults higher in open-mindedness are likely to see more friends than older adults who are less open-minded, as they tend to engage more in intellectual activities (Hogan et al., 2012) and live in areas with social and cultural facilities (Murray et al., 2005). In contrast, students who score higher on open-mindedness are seen as more intellectual but also as more hostile (e.g. Back et al., 2009), which might result in fewer friendships. Accordingly, the effects of open-mindedness were more pronounced with older age in previous studies focussing specifically on friendships (Buecker et al., 2020; Wrzus et al., 2016b); Among older adults, higher open-mindedness was associated with being with friends more often and being less lonely, whereas no such associations were observed among young adults. We thus expected that *(H2h) the effect of open-mindedness on friends/family-contact is more pronounced in older age.*

We further explored whether age moderates the associations between the other three personality traits and friends/family-contact (i.e. neuroticism, conscientiousness and agreeableness).

Family, friends and affective well-being

Theoretical accounts on the affiliation motive posit that people vary in their need to form and maintain close relationships and that fulfilling this need in satisfying social contact is important for well-being and health (Baumeister & Leary, 1995; Hofer & Hagemeyer, 2018; McClelland, 1986; Murray, 1938). People who have few family or friends in their networks on average have lower well-being (e.g. Fiori et al., 2008; Litwin & Shiovitz-Ezra, 2011). Also, on a day-to-day level, people with more social interactions report higher well-being (Sun et al., 2019), and people are generally happier during a social interaction than when they are alone (Bernstein et al., 2018). Furthermore, the relation between relationship type and well-being is likely to differ between and within persons.

Although family members are often considered as friends (Allan, 2008; Buijs & Stulp, 2021) and friends can be like family (family of choice; Roseneil, 2005; Weston, 1991; Wrzus et al., 2012), people still associate family relationships with hierarchy rather than equality, generalised rather than equivalent reciprocity, obligation rather than choice, legal rights and responsibilities, and financial support (Allan, 2008). Friends are seen as more voluntary contacts compared to family, and therefore, being with friends is expected to be more strongly related to a positive affect than being with family, which is more often based on duty/care (Argyle & Henderson, 1985; Blieszner & Roberto, 2004). Furthermore, family relationships are more likely to be both close and problematic, whereas friendship relations are mainly close but not problematic (Fingerman et al., 2004). In most studies of adult relationships, well-being and life satisfaction have been more strongly associated with more friendships than more family relationships (Chopik, 2017; Goudy & Goudeau, 1982; Litwin, 2001; Litwin & Shiovtiz-Ezra, 2011). Controlled for the number of close friends, which is associated with higher well-being, the number of family members had no incremental association with well-being (Bruine de Bruin et al., 2020). Contact with family might thus result in less positive affect compared to contact with friends.

As individual differences can be expected in the distinction between family and friendship relations, and most people do not have problems within their family, it is important to understand whether these effects also hold within persons. People seem to be happier if they have relatively more friends in their network, but are people also happier when in the company of friends? An event-based experience sampling study of 137 adults showed that, in general, people are happier when they are with friends than with family or others (Mueller et al., 2019). With our random assessment design, we expected to replicate that *(H3) people experience more positive affect in situations when they are with friends than when they are with family.*

Personality and age differences in affective well-being when being with friends or family

Personality traits could not only affect the relative amount of contact with family or friends, but also the extent to which this contact relates to well-being. There is some indication that people higher in neuroticism might be happier during interactions with friends than interactions with family (Mueller et al., 2019). In addition, people higher in extraversion spend, in general, more time with family and friends than less extraverted people, and report more positive affect during these interactions (Lucas et al., 2008). Overall, however, there is little empirical evidence for personality effects on momentary happiness in specific relationships. Theories on affiliation motives postulate that the need for social contact and belonging can be satisfied in different types of relationships (Baumeister & Leary, 1995; McClelland, 1986). Therefore, an orientation more towards family or friendships might differ with personality traits, but well-being experienced in interactions with specific relationship types might not differ with different levels of Big

Five traits. We therefore expected that *(H4a) none of the Big five personality traits significantly moderates the relation between being with friends versus family and positive affect.*

In addition, associations between well-being and being with friends or family might differ across adulthood. There are some indications that family relationships might be more beneficial for the well-being of older adults, compared to friendship relations (Charles & Piazza, 2007; Tomini et al., 2016). In some countries, the proportion of friends in the personal network was negatively related to well-being for people over 50 years old (Tomini et al., 2016). Older adults further report fewer positive emotions with new friends than younger adults and more positive emotions with family members (Charles & Piazza, 2007). In contrast, younger people are more often with friends, but older people are more satisfied with their contact with friends (Nicolaisen & Thorsen, 2017). However, older adults have similar levels of well-being if they have a family-oriented, friendship-oriented, or diverse social network – only a restricted or 'small' network was accompanied with lower well-being (Fiori et al., 2008; Litwin & Shiovitz-Ezra, 2011). Thus, family members and friends seem to serve as substitutes for each other with respect to well-being (Wrzus et al., 2012). Similarly, no age differences were found in affective responses to interactions with friends relative to family members (Mueller et al., 2019). We therefore expected that *(H4b) age does not significantly moderate the relation between being with friends versus family and positive affect.*

There is some indication that in certain age groups, personality might have a different effect on positive affect during interactions with family or friends. For young adults, extraversion predicted more contact with friends and more positive affect during such interactions, but not more contact with family or more positive affect during interactions with family (Lucas et al., 2008). However, this study only examined young adults. Other research showed that personality effects on happiness in social contexts manifest in similar ways across the adult lifespan (Mueller et al., 2019). We therefore expected that *(H4c) the moderation effect of the personality traits on being with friends versus family and positive affect does not significantly differ with age.*

Friends-family-interdependence and affective well-being when being with friends or family

To a certain extent, people have agency and can choose whom they are with. This agency might be greater in the context of voluntary friendships than in the context of family relationships, but people have *some* influence on how much time they spend with others. People who are more family-oriented were therefore expected to spend more time with family in general, and are likely to experience more positive affect when accompanied by family. Friends/family-contact indicates an orientation towards contact with either friends or family, and we thus hypothesized that *(H5) generally being more with friends than family positively moderates the relation between being momentarily with friends (compared to family) and positive*

affect. In other words, we expected that people who are *more often* with friends in general (i.e. friends-oriented) also feel more positive affect in specific situations *when* they are with friends. Similarly, people who are more family-oriented were assumed to feel more positive affect in situations when they are with family.

We further examined whether this association differs with age, as people differ in their agency over the life course. For example, in young adulthood, parenthood might shift the focus towards the family network even if people prefer to be with friends, and in middle adulthood, contact with friends might unwittingly decrease due to long working hours. We therefore explored whether age moderates the relation between friends/family-contact, being momentarily with friends versus family, and positive affect.

Present study

To summarise, we followed two main angles of inquiry and examined: (a) how Big Five personality traits and age are associated with friends/family-contact, that is, the relative frequency that people are with friends compared to family (between-person associations) and (b) how Big Five traits, add, and friends/family-contact predict positive affect when people are with friends compared to family (within-person associations for Figure 1). The current study thus extends previous work that examined specific relationships separately (e.g. friends, parents or romantic partners) by focussing on the interdependence between family and friends as well as personality differences, age differences and affective consequences. Results could provide (a) insight into individual differences in maintaining different social relationships simultaneously and (b) handles to uphold and enhance well-being based on individual preferences in social contact.

Previous studies on personal relationships often examined retrospectively reported relationships (i.e. quantity or quality; Rözer et al., 2016; Sander et al., 2017; Wrzus et al., 2013). This might entail the problem of forgotten relationships, that is, people sometimes forget to mention important people in their network (Brewer, 2000; Fischer & Offer, 2020). The current experience sampling study directly assessed the presence of other people, which leaves less room for forgotten persons and other recall bias (Schwarz, 2012).

The current study also extends previous between-person studies on relationships and well-being (e.g. Fiori et al., 2008; Litwin & Shiovitz-Ezra, 2011; Wrzus et al., 2012) by examining within-person differences in affective well-being. In contrast to previous studies, which included a romantic partner in family relationships (Mueller et al., 2019), we focused strictly on family members and exclude romantic partners because the latter constitute a separate category compared to family relationships and friendships (Neyer et al., 2011). We also extend previous studies by using a broad concept of well-being, namely positive affect instead of happiness (e.g. Mueller et al., 2019), which is more likely to capture the direct effect of the social interaction, in terms of need and goal satisfaction. To examine the generalisability and broad applicability of the findings, we included a lifespan sample, whereas most other studies focused either on young adulthood or old age.

## Method

Disclosure of open science practices

We preregistered the hypotheses and data analyses before the first author, who analysed the data, had access to the already existing data from 2010 or any of the authors analysed the data (OSF: https://osf.io/5x2a4/). Changes that have been made after preregistering are documented in Supplement A. Supplements and codes for analyses and figures are stored under the same project link at OSF. Data cannot be made openly accessible due to missing consent from participants. Upon request, data are available for re-analyses from the last author. Ethical approval was acquired from the Max Planck Institute for Human Development for the original data collection. Articles based on data from the same sample did not overlap in topic or analyses (Riediger, 2018; Wrzus et al., 2013) see detailed explanations in preregistration, https://osf.io/5x2a4/).

Participants

The second wave (2010–2011) of the Multi-Method Ambulatory Assessment project (MMAA project, Riediger, 2018) was used to examine our research questions. The MMAA project was conducted to study affective experiences in daily life and across the lifespan. We used the second wave, as this wave comprised most participants ($N = 400$). The sample consisted of German participants between 12 and 88 years old ($M = 39.90$ years, $SD = 20.50$). Men and women were largely balanced across age groups (on average, 52% women), 58% of the participants had a partner, and 43% had children. If one of the children was under 18 years old, the participants were coded as having a young child (20%). If all the children were over 18 years old, they were coded as having adult children (24%). People under 25 (34%) and over 65 years old (15%) were unlikely to have a full-time job (respectively, 11% and 0%). For people between 25 and 65 years old, more than half had a full-time job, and 20% had a part-time job. Two participants did not report if they had a partner; all participants reported their gender, their age, and if they had children and a job.

Procedure

Participants answered a questionnaire regarding demographic and personality information, received the study-owned mobile phone as well as instructions on handling the questions, and then took part in a three-week experience sampling procedure. During this time, participants received six prompts per day for mobile phone-based assessments, for three consecutive days. This was followed by six break days, three more assessment days, six break days and three final assessment days. If participants answered on average less than five assessments per day, an extra day with six assessments was scheduled for the next day. This led to an average of 55 assessments ($SD = 4.76$) per participant. At each assessment, participants reported on their momentary affective experience, the persons that were momentarily present, and other variables, which are not relevant for the
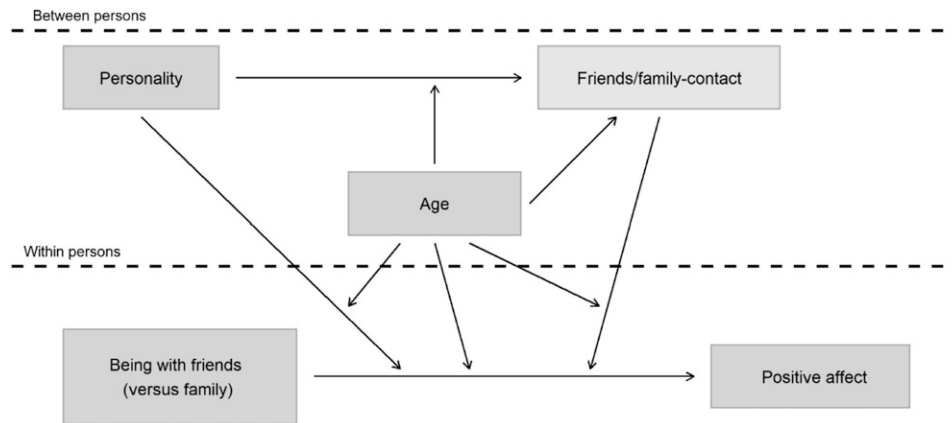
Figure 1. Conceptual model.

current research questions (see Supplement B for descriptive statistics of all relationship categories). More information on the data collection process (first wave) can be found in Riediger (2010). Four participants did not participate in the experience sampling part and were therefore excluded from the analyses, resulting in a final sample of 396 participants.

All analyses were performed in R (R Core Team, 2018) and conducted as preregistered. R scripts and preregistration are provided at https://osf.io/5x2a4/.

Measures

Positive affect. Positive affect was examined at the beginning of each experience sampling assessment with the following question: 'You are about to see a number of words related to mood. We are interested in how you are feeling right now'. Positive affect items were Joyful, Enthusiastic and Energetic (high-arousal positive affect), Relaxed, Balanced and Content (low-arousal positive affect), as well as Interested (neutral arousal). Participants could indicate their response to each affect item with options from 0 (*not at all*) to 6 (*very strongly*). Multi-level CFA confirmed that the different items of positive affect could be summarised into one factor (CFI = 0.95, RMSEA = 0.12 [0.12, 0.13]). Within-person and between-person reliability was high (respectively, $\omega = 0.84$ and $\omega = 0.93$). If participants answered at least one of the items, the mean of all answered items was taken. Otherwise, they were counted as missing ($n = 21$, i.e. 0.1% of all assessment points, max. 2 per participant).

Persons present. During each experience sampling assessment, participants reported who was also present. Participants could choose between the options: no one, partner, family, friends, colleagues, strangers and others. Multiple options could be checked when participants were with more than one person simultaneously. When participants were with more than one relationship type including friends or family, this was coded as being with friends or family. For example, if a participant reported to be with friends and strangers, this was recoded as being with friends, and when participants reported to be with family and the partner, this was recoded as being with

family. Moments when participants were with both friends and family were not taken into account (1.6% of all assessments, $n = 362$, max. 19 per participant). In less than 0.5% (75 out of 21,804) of assessments, participants did not answer this question (max. 5 missing per participant).

Friends/family-contact. This indicator was obtained for participants who reported being with family or with friends at least once. Participants who never reported being with family or friends during the experience sampling period were coded as missing on this variable ($n = 10$ participants). Friends/family-contact was computed by dividing the number of assessment times with friends by the number of times with friends and family, to account for participants without any family or friend contacts. Higher scores indicate being relatively more frequently in the presence of friends than family members. The variable theoretically ranges from 0 (participant reported being with family at least once, but never reported being with friends) to 1 (participant reported being with friends at least once, but never reported being with family). For example, a friends/family-contact score of 0.5 means that participants were with friends and family for an equal amount of assessments, while a friends/family-contact score of 0.66 would indicate that the participant was twice as much with friends compared to family ($\frac{Nfriend}{Nfriend+Nfamily} = \frac{2}{2+1} = 0.66$), and a friends/family-contact score of 0.33 would indicate that the participant was twice as much with family compared to friends ($\frac{1}{1+2} = 0.33$).

Big five personality traits. Personality was measured with the short version of the self-report Big Five Inventory (BFI-S, Lang et al., 2011) after the experience sampling assessments. The BFI-S consists of three items per trait, with response categories between 1 (*not at all*) and 7 (*very much*). One additional item was added to measure open-mindedness, namely: 'I am someone who . . . is curious', to compensate for the low internal consistency of open-mindedness in previous studies. Most personality traits had acceptable internal consistency ($\alpha > 0.66$, $\omega > 0.68$). Internal consistency for agreeableness was slightly lower with $\alpha = 0.53$ and $\omega = 0.62$, but the scales consisted of only three items, and were intended to measure different aspects

of the personality trait. All participants reported on the personality questionnaire.

Analytical strategy. To examine if participants who were more often with friends were less often with family (H1), we calculated the Pearson correlation between the percentage of beeps with friends and the percentage of beeps with family. We set the significance level at 0.05 and corrected for multiple testing by using the false discovery rate (FDR) correction (Benjamini & Hochberg, 1995).

To examine the relation between friends/family-contact, age and personality (H2a-g), we performed linear regression analyses on the friends/family-contact score. All variables, except for dummy variables, were grand-mean centred to facilitate interpretation and to construct interaction variables. To examine generational differences in effects of age on friends/family-contact, we constructed dummy variables for participants under 25 and over 65 years old, in addition to the linear age variable. Thus, for example, an 18-year-old will receive a 1 on '<25', a 0 on '>65' and 18 on 'age', where a 70 year old will receive a 0 on '<25', a 1 on '>65' and 70 on 'age'. People between 25 and 65 years old are the reference category concerning the age-dummy variables. This approach enabled us to examine non-linear, non-quadratic age effects (Fjell et al., 2010; Pontzer et al., 2021).

In stepwise regression analyses, we first included age, the dummy variables for participants under 25 and over 65 years old, and their interactions. Second, we added all personality traits and their interactions with age. Third, we controlled for the covariates gender, having a partner, (adult) children and a job, which might also provide or constrain opportunities for social interaction as well as affective responses. Finally, we performed two models with all personality traits simultaneously, including age and all interactions, with and without covariates.

To examine if participants felt more positive affect when they were with friends as compared to family (H3), we performed multi-level regression analyses, as multiple measurements were nested within participants (Snijders & Bosker, 2012). The main analyses were performed with the moments when family or friends were present (33% of all measurements, 18.4 measurements per person (SD = 13.1)). First, we predicted momentary positive affect (level 1 – within-person) by the dummy-coded variable of momentarily being with friends (1 = yes, friends, 0 = no, family); thus, being with family served as a reference category. Both intercepts (i.e. average positive affect when being with family) and slope (change in positive affect when being with friends) were modelled with random effects. Second, we added the between-person variables age (including the dummy variables) and Big Five traits on level 2 to predict both intercept and slope. Lastly, we included the covariates gender, having a partner, (adult) children and (full-time) job. To keep the model more parsimonious, and because the age-dummy variables (i.e. younger than 25 years, older than 65 years) and covariates were not associated with momentary positive affect, we did not include these variables in the final model.

To examine if participants feel more positive when they are with friends when they have a higher friends/family-contact score (H5), we again performed multi-level regression analyses. This model included only the within-person

dummy-variable 'being with friends', the between-person variable friends/family-contact score, age as a control variable and the respective cross-level interactions. Finally, we combined the model with personality traits and the model with the friends/family-contact score, to examine changes in effect size and model fit between the different models.

Robustness checks. We also performed several robustness checks (Supplement C). For the between-person analyses, we examined models without people who never were with friends or never were with family, models controlling for the total amount of contact and models with age squared and age cubic instead of the age dummies. For the within-person analyses, we also examined models without people who never were with friends or never were with family. Furthermore, we included both being with friends and being with family in the model, with being alone as the reference group. Next, we included other relationship types, such as being with a partner, colleague, or stranger. Lastly, we examined the models for high-arousal positive affect and low-arousal positive affect separately. In general, the results were similar to the main models. We only discussed these results where they differ from the main models.

Results

Descriptive statistics and correlations between the main variables are presented in Table 1. Figure 2 depicts the distribution of friends/family-contact in the sample. Descriptive statistics and correlations of all variables (including the within-person variables) can be found online (Supplement B) at https://osf.io/5x2a4/.

RQ1: Being with friends and family

The median score for friends/family-contact was 0.33, which indicates that most participants were more often with family members than friends. Still, 23% of participants received scores beyond 0.66 thus were over twice as often with friends compared to family. In exploratory analyses, we computed the temporal stability of friends/family-contact. When computing the friends/family-contact score separately for the first and the second parts of the ESM assessments, the scores for each participant were quite stable over the 3 weeks of assessment (r = 0.59) and similar for both assessment parts (M_1 = 0.40, M_2 = 0.38, $t_{(726)}$ = 0.73, p = 0.47). Contrary to our expectation (H1), participants who were more often with family were also somewhat more often with friends (r = 0.10, p = 0.05, 95% CI [0.00;0.20]). Post-hoc analyses showed that when 10 participants (3%) were excluded, who never were with friends or with family, the correlation between the percentage moments with friends versus with family was not statistically significant from zero (r = −0.05, p = 0.29, 95% CI [−0.15;0.05]).

RQ2 and RQ3: Big five and age moderating friends/family-contact

Personality traits and age generally only had small associations with friends/family-contact (Table 1). We found no evidence that friends/family-contact was associated with

Table 1. Descriptive statistics of the main between-person variables and their correlations with the friends/family-contact score, positive affect and percentage of time being with friends, family, or alone (N = 396).

	Mean (SD)	Correlations				
		Friends/family-contact	Positive affect	% Being with friends[a]	% Being with family[a]	% Being alone[a]
Friends/family-contact[b]	0.40 (0.32)	/	0.02	0.63	−0.58	0.27
Positive affect	3.63 (0.93)	0.02	/	−0.04	−0.04	−0.02
Age	39.90 (20.50)	0.05	0.29	−0.40	−0.45	0.26
Extraversion	5.11 (1.24)	0.09	0.07	0.15	0.01	0.02
Agreeableness	5.33 (1.00)	−0.10	0.13	−0.08	0.08	−0.03
Open-mindedness	5.12 (1.16)	0.06	0.25	0.00	−0.02	−0.01
Conscientious	5.44 (1.13)	−0.16	0.20	−0.28	−0.04	0.05
Neuroticism	3.55 (1.32)	0.01	−0.19	0.02	−0.01	−0.04

Note: Positive affect was based on the person-mean of positive affect across all ESM assessments. Values > |0.19| are significant at $p < 0.001$.
[a]percentage of ESM assessments.
[b]higher score indicates being relatively more with friends versus family.
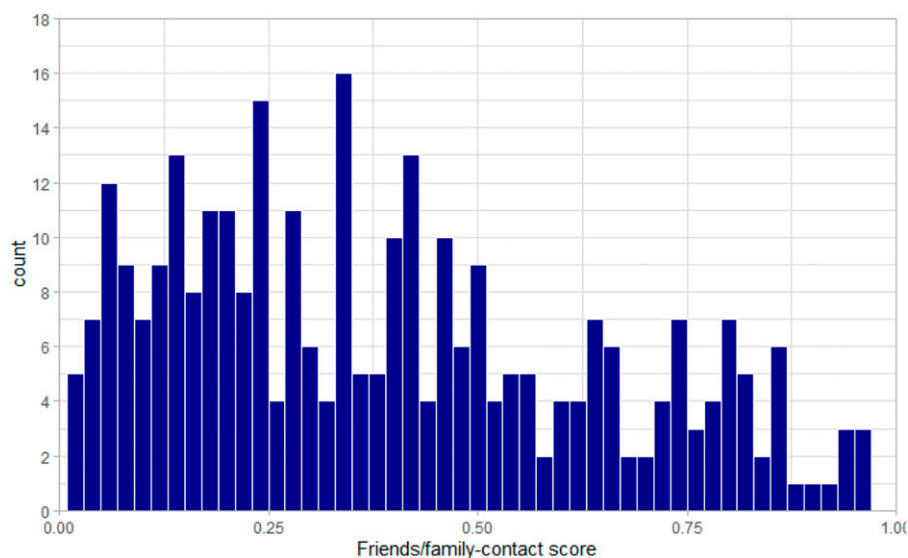
Figure 2. Distribution of the friends/family-contact score (0 = family only, 1 = friends only).

personality (H2a-e), but the relative amount of time spent with friends varied with participants' age. In general, with every additional 10 years of age, participants scored 0.07 points higher on friends/family-contact ($p = 0.001$), thus were relatively more often in the company of friends compared to family (Table 2; Supplement C). We found no evidence that participants under 25 years old were significantly more with friends than family with advancing age (H2f; Table 2; Figure 3). Participants over 65 were significantly more often with friends relative to family members, also compared to younger adults, and with advancing age this effect became somewhat less pronounced (Table 2; Figure 3). Along the entire adolescent and adult lifespan large individual differences in friends/family-contact were observed (SD = 0.32; Figure 3). Against our expectations, the friends/family-contact score did not indicate a higher family orientation after young adulthood (H2f).

Robustness checks indicated that excluding participants who were never with friends or family changed the models such that the age effects for people over 65 years of age were no longer statistically significant (Supplement C). These effects thus seem to be driven by participants who only saw friends or only saw family members. Being more often with friends and family in general corresponded to a lower friends/family-contact score, but adding the total share with friends and family as a control variable did not change the patterns as described above (Supplement C).

RQ3, RQ4 and RQ5: Prediction of positive affect

The Intraclass Correlation Coefficient (ICC) for positive affect was 0.40, meaning that about 40% of the variance in positive affect was attributable to individual differences, while about 60% resulted from within-person variation (and error), and thus multi-level modelling was appropriate.

Supporting H3, in all models, being with friends was related to higher positive affect than being with family (Table 3). Without any other variables included in the model, participants reported on average 0.30 (standardized beta = 0.30/0.93 = 0.32) scale points higher scores on positive affect when they were with friends instead of with

Table 2. Friends/family-contact score (0–1) predicted by Age, Big Five traits and Demographic Variables (*N* = 384; Unstandardized Coefficients from Regression Analyses).

|	B (SE)	95% CI	p-value	cor. p-value
Intercept	0.59 (0.05)	(0.49, 0.68)	<0.001	<0.001
Age	0.07 (0.02)	(0.03, 0.11)	0.001	0.004
Age<25	0.22 (0.19)	(−0.14, 0.59)	0.23	0.58
Age*age<25	0.11 (0.09)	(−0.07, 0.28)	0.23	0.58
Age>65	1.01 (0.25)	(0.52, 1.50)	<0.001	<0.001
Age*age>65	−0.29 (0.08)	(−0.45, −0.14)	<0.001	0.002
Extraversion	0.03 (0.02)	(−0.01, 0.06)	0.19	0.58
Age*extraversion	0.00 (0.01)	(−0.03, 0.03)	0.94	0.99
Age<25*extraversion	0.04 (0.16)	(−0.27, 0.35)	0.81	0.99
Age*age<25*extraversion	0.01 (0.07)	(−0.12, 0.15)	0.85	0.99
Age>65*extraversion	0.03 (0.20)	(−0.36, 0.42)	0.87	0.99
Age*age>65*extraversion	−0.03 (0.06)	(−0.15, 0.10)	0.68	0.99
Agreeableness	−0.05 (0.02)	(−0.09, −0.01)	0.02	0.10
Age*agreeableness	0.04 (0.02)	(0.01, 0.08)	0.02	0.10
Age<25*agreeableness	0.17 (0.20)	(−0.23, 0.57)	0.41	0.79
Age*age<25*agreeableness	0.02 (0.09)	(−0.16, 0.20)	0.84	0.99
Age>65*agreeableness	−0.01 (0.24)	(−0.47, 0.45)	0.96	0.99
Age*age>65*agreeableness	−0.00 (0.07)	(−0.14, 0.13)	0.95	0.99
Open-mindedness	0.01 (0.02)	(−0.03, 0.06)	0.52	0.95
Age*open-mindedness	−0.04 (0.02)	(−0.08, −0.01)	0.02	0.10
Age<25*open-mindedness	−0.02 (0.18)	(−0.38, 0.34)	0.91	0.99
Age*age<25*open-mindedness	0.03 (0.08)	(−0.13, 0.18)	0.73	0.99
Age>65*open-mindedness	−0.34 (0.24)	(−0.82, 0.14)	0.17	0.58
Age*age>65*open-mindedness	0.15 (0.08)	(0.00, 0.30)	0.04	0.17
Conscientiousness	−0.02 (0.02)	(−0.07, 0.02)	0.33	0.69
Age*conscientiousness	0.02 (0.02)	(−0.01, 0.06)	0.20	0.58
Age<25*conscientiousness	0.00 (0.18)	(−0.34, 0.35)	0.99	0.99
Age*age<25*conscientiousness	−0.00 (0.08)	(−0.15, 0.15)	0.97	0.99
Age>65*conscientiousness	−0.25 (0.23)	(−0.70, 0.19)	0.26	0.60
Age*age>65*conscientiousness	0.06 (0.07)	(−0.07, 0.19)	0.38	0.99
Neuroticism	0.01 (0.02)	(−0.03, 0.04)	0.73	0.76
Age*neuroticism	0.00 (0.01)	(−0.03, 0.03)	0.98	0.99
Age<25*neuroticism	0.16 (0.13)	(−0.10, 0.42)	0.23	0.58
Age*age<25*neuroticism	0.06 (0.07)	(−0.06, 0.17)	0.32	0.69
Age>65*neuroticism	−0.06 (0.20)	(−0.46, 0.34)	0.76	0.99
Age*age>65*neuroticism	0.01 (0.07)	(−0.12, 0.14)	0.90	0.99
Sociodemographics				
Gender	−0.01 (0.03)	(−0.07, 0.05)	0.78	0.99
Partner	−0.14 (0.03)	(−0.20, −0.07)	<0.001	<0.001
Young child	−0.31 (0.04)	(−0.40, −0.22)	<0.001	<0.001
Adult child	−0.30 (0.05)	(−0.40, −0.21)	<0.001	<0.001
Full-time job	0.02 (0.04)	(−0.06, 0.10)	0.55	0.97
Part-time job	0.02 (0.05)	(−0.07, 0.12)	0.63	0.99
Adjusted R^2	0.31			

Note: Effect sizes of continuous age indicates a 10-year difference. Positive coefficients = predicting relatively more interactions with friends than family. Cor. *p*-value = Adjusted *p*-value based on FDR correction.

family members (*p* < 0.0001). The covariates as used in the between-person models also did not change these or any of the following models, nor did any of the covariates have a significant effect on positive affect (Supplement C).

Overall, age and personality traits did not moderate the association between being with friends versus family and positive affect (H4a,b; Table 3), with the exception of extraversion. The higher participants scored on extraversion, the higher positive affect they felt when they were with friends compared to family. For participants low on

extraversion there was almost no difference in positive affect (Figure 4).

The model also showed that more positive affect was reported by older participants, by those higher on open-mindedness, and those lower on neuroticism (Table 3). Participants under 25 and over 65 years of age did not significantly differ in positive affect, nor did we find significant moderation effects of age or personality on positive affect (Supplement C). Three-way interactions between age, personality traits and being with friends on positive
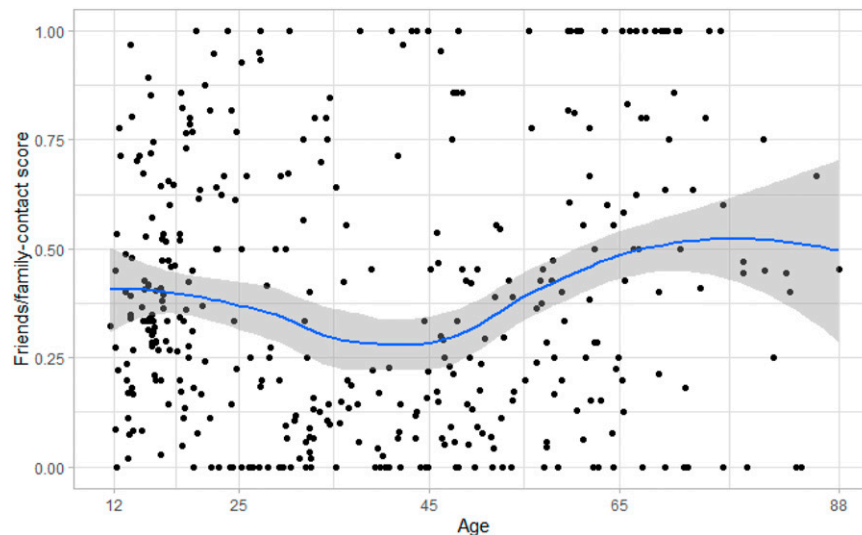
Figure 3. Scatterplot of the friends/family-contact score (0 = family only, 1 = friends only) per year of age. The blue line indicates a smoothed visualisation of the formula friends/family-contact score ~ age and the grey bound corresponds to the 95% confidence interval.

Table 3. Momentary positive affect predicted by being with friends versus family, personality traits, age and the friends/family-contact score (N = 386).

	B (SE.)	95% CI	p-value	cor. p-value
Intercept	3.74 (0.05)	(3.54, 3.75)	<0.001	<0.001
Within-person				
Friend	0.30 (0.05)	(0.20, 0.39)	<0.001	<0.001
Between-person				
Extraversion	−0.03 (0.04)	(−0.14, 0.03)	0.20	0.32
Agreeableness	0.06 (0.05)	(−0.04, 0.17)	0.20	0.32
Open-mindedness	0.15 (0.04)	(0.05, 0.24)	0.004	0.02
Conscientiousness	0.05 (0.05)	(−0.04, 0.17)	0.22	0.33
Neuroticism	−0.10 (0.03)	(−0.18, −0.02)	0.01	0.03
Age	0.13 (0.03)	(0.06, 0.18)	<0.001	<0.001
Friends/family-contact	−0.00 (0.17)	(−0.29, 0.52)	0.58	0.65
Friends/family-contact*Age	0.19 (0.08)	(0.06, 0.45)	0.01	0.03
Cross-level interactions				
Friend*Extraversion	0.10 (0.04)	(0.02, 0.17)	0.01	0.03
Friend*Agreeableness	−0.03 (0.05)	(−0.12, 0.06)	0.55	0.65
Friend*Open-mindedness	0.00 (0.04)	(−0.08, 0.09)	0.94	0.98
Friend*Conscientiousness	−0.04 (0.04)	(−0.13, 0.05)	0.35	0.49
Friend*Neuroticism	0.00 (0.03)	(−0.07, 0.07)	0.98	0.98
Friend*Age	0.02 (0.03)	(−0.03, 0.08)	0.42	0.54
Friends/family-contact*Friend	−0.35 (0.20)	(−0.74, 0.04)	0.08	0.15
Friends/family-contact*Friend*Age	−0.21 (0.10)	(−0.41, −0.00)	0.05	0.10
AIC	22016	22016		
BIC	22167	22167		

Note: Unstandardized coefficients from multi-level regression models. Effect size of continuous age indicates 10-year difference. CI = 95% confidence interval; cor. p-value = p-value after FDR correction. SE = Standard error. AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion.

affect were also not significant (H4c; Supplement C), and results remained stable after entering the covariates.

Friends/family-contact was associated with positive affect, but contrary to expectations, because we did not find a significant moderation effect of friends/family-contact on the association between being with friends (versus family) and positive affect (H5; Table 3). The main effect of friends/family-contact on positive affect was not significant, but significantly moderated by participants' age (Table 3;

Figure 5): Compared to younger people, older people with a higher friends/family-contact score generally experienced more positive affect in situations with family. Put differently, when older people generally had relatively more contact with friends than family, they still felt better when they actually were with family. In contrast, when younger people generally had relatively more contact with friends than family, they tended to feel less positive when they actually were with family.
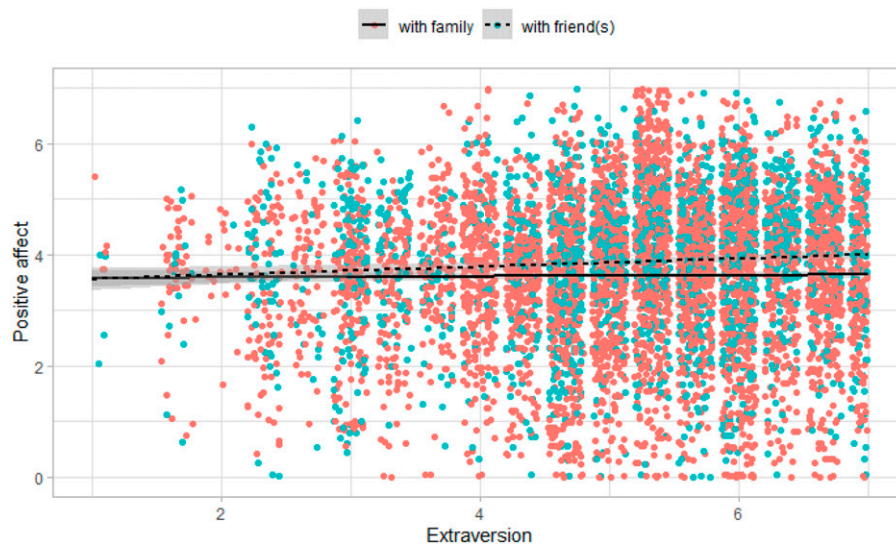
Figure 4. Interaction effect of extraversion and being with friends (blue, dashed line) versus family (orange, solid line) on positive affect.
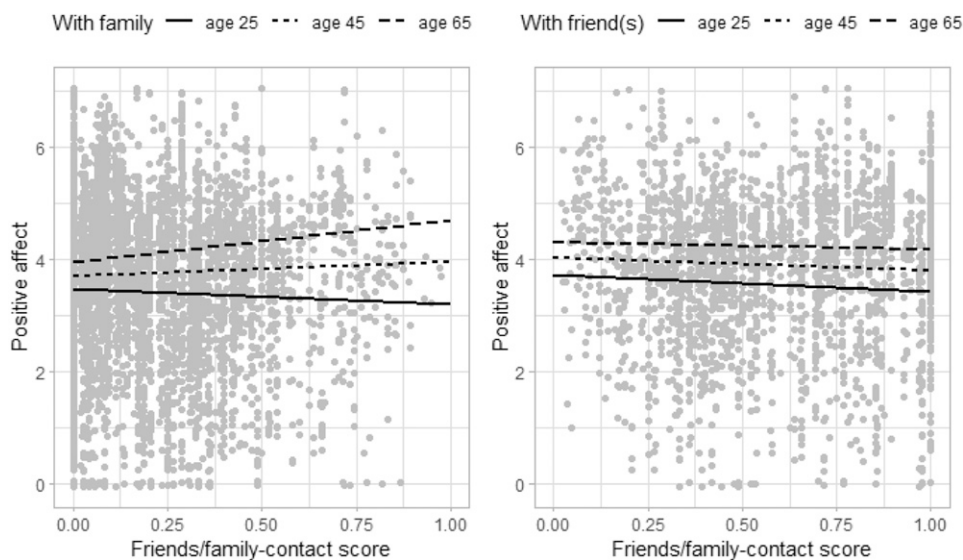
Figure 5. Illustration of interaction effect of friends/family-contact and age on positive affect when with family (left) and friends (right). Depicted are three exemplary age groups.

Discussion

Investigating friends-family-interdependence in the daily life of adolescents and young and older adults provided new insights into the associations between personality and social relationships. Our models yielded two key observations. First, large individual differences existed in friends/family-contact, which were moderately stable over a few weeks, but these individual differences were largely independent from the Big Five traits. Second, people experienced more positive affect when they were with friends than family, irrespective of personality (with extraversion as a potential exception) and age.

Importance of friends-family-interdependence

Most people were slightly more often with family than with friends. Contrary to our expectation, participants who were more often with friends were not less often with family (see section on methodological limitations below). Rather,

participants who were more often with friends, also were somewhat more often with family ($r = 0.10$). This would argue in favour of the sociability perspective in which some people are more often with close others in general, regardless of relationship type. However, when we examined the same correlation but excluded people who were never with either friends or family (i.e. same sample as for the within-person analyses), the association was not significantly different from zero. Together with the large and consistent individual differences in family/friends-contact, this suggests that the interdependence seems to depend on differences in sociability. Therefore, investigating individual differences in the friends-family-interdependence seems even more worthwhile.

Individual differences in being with family or friends

Individual differences in friends-family-interdependence were expected to be linked to extraversion, neuroticism, open-mindedness and agreeableness. However, no Big Five

trait was significantly associated with friends/family-contact. Small to negligible associations between friends-family-interdependence and Big Five traits suggest that the orientation towards family or friends could reflect a narrower personality characteristic that is not fully captured by the broad Big Five traits, which each are multifaceted constructs that comprise more specific personality traits (e.g. gregariousness or warmth). This interpretation is consistent with other work, which also observed very small associations between Big Five traits and generalised self-reports of friends-family-interdependence (Wrzus et al., 2021) as well as ego-centred network approaches examining nepotism or kinship preference (Neyer & Lang, 2003).

Across adulthood (age 25–65), people were increasingly more with friends compared to family, which contradicts our expectations regarding age differences. In addition, people over 65 were generally more friendship-oriented than younger people. One explanation could be that especially middle-aged adults have relatively little contact with friends (Sander et al., 2017; Wrzus et al., 2016b) due to work and family responsibilities, which leave little time for friends. These external constraints might be relieved among older adults. An alternative explanation for decreasing family contact frequency is that older people are less likely to have their children or other family members living at home. For example, in the current study, people with younger children were more family-oriented, likely because they spend more time together with their family, that is, partner and children. Future studies should take the household composition into account when examining social relations. Also, the age of the interaction partner could be interesting to investigate, as we were not able to distinguish parents from children or siblings and more distant family.

Overall, individual differences in the relative contact frequency with friends compared to family were substantial, but not related to differences in Big Five personality traits. This could suggest that the preference for family contact over friends or vice versa, is a personality characteristic of its own, as it shows temporal consistency as well as predictive validity (Wrzus et al., 2021). It will be interesting to identify developmental antecedents of such a personality characteristic. For example, examining the process of achieving autonomy and the relationships quality with family and friends during adolescence seem to be fertile starting points.

Affective well-being in the company of friends or family

In general, people were happier when they were with friends than family, which is consistent with previous work (Hudson et al., 2020; Mueller et al., 2019). This within-person difference in well-being was also virtually independent of Big Five personality traits. Well-being when in the company of friends only significantly differed with extraversion: People higher on extraversion experienced more positive affect in situations involving friends than in situations involving family compared to people lower on extraversion. In addition, people higher in open-mindedness or lower in neuroticism reported higher

positive affect compared to people lower in open-mindedness or higher in neuroticism. These results are consistent with general associations between Big Five traits and affective experiences (Augustine & Larsen, 2012; Sherman et al., 2015). As argued initially, people possess an affiliation motive, which might differ in strength, but which can also be satisfied in different relationships, such as family or friends. Thus, individual differences in Big Five traits seem to play less of a role for affective well-being. Nonetheless, future studies might want to examine how facet-level or even more fine-grained personality characteristics are linked to affective experiences when being with family or friends (cq., Mõttus et al., 2017, 2019).

The association between friends/family-contact and positive affect differed with age. Older people experienced more positive affect in situations with family when they were generally relatively more often with friends than family, compared to younger people. This might be explained by the absolute levels of friends/family-contact, because older adults were generally less often with friends or family than younger people (see Table 1). Thus, older adults might not see their family very often, especially, when they emphasise friendships more, and therefore the moments when they do see family members might be more special. Alternatively, people may be happier when they are more with friends than with family because people undertake different activities with them (Hudson et al., 2020). It is plausible that the activities with family and friends are more distinct for younger people than for older people.

Limitations

The current study examined interdependencies among family relationships and friendships in daily life using an extensive experience sampling approach and a lifespan sample with almost 400 participants. In contrast to studies that focused on specific relationships separately, or assessed relationships with broad retrospective questionnaires, the current study derived an indicator of friends-family-interdependence based on momentary reports of actually being with family or friends. Nonetheless, some issues limit the conclusions that can be drawn from the current results and these issues might be addressed in future studies. First, because of the random assessments during the day, information on what happened in between momentary assessments is limited. Participants could have met friends or family in between assessments, which were on average two hours apart. However, as the assessments were semi-random and contact with others usually lasts several minutes to hours (e.g. Nezlek, 1993; White & Dolan, 2009), we argue that the current measurements provide a good indication of whom people spend their time with. In addition, the current results are similar to findings from a study using event-based experience sampling, which assessed each social interaction during the day (Mueller et al., 2019).

In the current study, it is unknown if participants were in the company of one or more persons. Extraverted people were not significantly more with friends than family and, in contrast to previous studies, also not more often with friends per se (Breil et al., 2019; Harris & Vazire, 2016; Harris et al., 2017). One plausible explanation is that people higher in

extraversion see more people at the same time and more often participate in group conversations (Mehl et al., 2006). Extraversion effects could be diminished because people differed in the frequency of being in groups, but not so much in the frequency of being with others (Mehl et al., 2006).

It was already mentioned that we did not measure the household constitution of participants. This might be an important confounder as people are likely to spend more time with people they live with (Neyer & Lang, 2003). For this reason, we included controls for having a partner and child, but it does not guarantee living together, and other possibilities like living with parents or friends were not considered. Relatedly, the proximity of family members would be interesting to include as well, as friends might become more important if family lives far away (Neyer et al., 2011), and also when financial resources are limited (Jachimowicz et al., 2021). These factors, household composition, proximity of family and friends, and resources, should be considered in future studies.

Furthermore, we did not distinguish between different types of family members. Being with children is likely to result in very different interactions than being with (grand)parents or more distant family like cousins. Friends are more often of similar age, which means that cousins may operate more like friends than uncles and grandparents (Wrzus et al., 2012). Additionally, some very close friends can be considered as family as well (Roseneil, 2005; Weston, 1991). Relatedly, younger people may call classmates friends instead of colleagues. Zooming in on specific family and friendship relations and also extending the focus to other relationships that might be close under certain conditions (e.g. supervisors, personal coaches and neighbours), might help us understand complex friends-family-interdependence. Lastly, indicators other than the amount of social interactions might add to the understanding of friends-family-interdependence. Types of activities during interactions, for example, might explain why people are more positive with certain social relations.

Lastly, most effects were small, and future, even larger studies could test with different analytical approaches (e.g. Bayesian) whether truly no meaningful associations exist between Big Five traits and friends-family-interdependence (Gelman, 2017; Gelman et al., 2012). Relatedly, using a more extensive measurement of the Big Five traits could increase the coverage of the construct and its reliability, and therewith reduce the risk of false negatives. If the small effect sizes that we obtained and that have also been observed in studies with more comprehensive trait measures (e.g. Wrzus et al., 2021) are replicated in even larger samples, this would call for further examinations of other predictors of individual differences in friends-family-interdependence. Robust small effect sizes could also have practical significance (Götz et al., 2021).

Conclusion

As most people maintain both family relationships and friendships, mutual influences on each other, that is,

interdependence, might exist. People generally maintain social relationships with many different individuals, such as family members, friends, romantic partners, colleagues, neighbours and others (e.g. Neyer & Lang, 2003, 2011; Wrzus et al., 2013). As people are limited in their amount of time and energy, relationships are often interdependent (Fiori et al., 2017; Klärner et al., 2016; Rözer et al., 2016). That is, spending time on and maintaining certain relationships usually leads to having less time and energy for other relationships. Whereas previous research primarily studied separate types of relationships, the current study examined interdependencies among family and friends, which are two of the most important relationship types across the adult lifespan (Mund & Neyer, 2014; Neyer et al., 2011). The current findings suggest substantial individual variation in frequency and importance of contact with family members relative to with friends. Still, having more contact with family members was not accompanied with less contact with friends, or vice versa, in the current study. As we discussed before, friends/family-contact might not solely indicate a preference for one over the other, but also result from external demands (e.g. having to take care of family or friends). Interestingly, the relative friends/family-contact score was largely independent from the broad Big Five traits, but analyses focussing on more narrow personality facets and other predictors, such as relationship history, remain warranted.

In general, both family and friendship relations are key to social support and well-being (Bernstein et al., 2018; Berscheid & Reis, 1998; Diener et al., 2018; Dunbar, 2010). In the current study, people were, on average, happier in situations when they were with friends relative to family members, and this effect was more pronounced in more extraverted participants. Age and general friends-family-interdependence showed a more complex association with positive affect. Thus, examining friends-family-interdependence provides more nuanced insights into personality-relationship associations. Extending the focus on interdependencies among social relationships could enlarge our understanding of interpersonal differences in these relationships.

Data accessibility statement

The preregistration, data analyses scripts and supplements can be found at OSF via https://osf.io/5x2a4/. As the raw data contains personal information, this can only be shared after a confidential agreement has been signed. Please contact the last author for more information on data accessibility.

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Note

1. Note that the wording and numbering of hypotheses is slightly different from the preregistration. See supplement A for the original numbering of the hypotheses.

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