Narcissism and Friendship Quality:
An Investigation of Long-Term Friendships

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Summary

The aim of this dissertation was to examine the perceived relationship quality in long-term friendships in dependence of narcissism from two directions: Who is willing to be in a close relationship to an individual with high narcissism, and how do individuals with high narcissism perceive their friendships? Three aspects of narcissism were distinguished (agentic, antagonistic, and neurotic) in order to determine their association with different aspects of friendship quality (appreciation, intimacy, conflict, and dominance).

In the first study, a dyadic perspective was taken to observe whether friendship quality differs depending on the dyadic narcissism level of friends. As hypothesized, individuals in dyads with higher narcissism perceived their friendship quality as lower, compared to individuals in dyads with lower narcissism. More conflicts were perceived across all narcissism aspects. Dyads reporting high antagonistic narcissism also perceived lower appreciation and intimacy. Findings for neurotic narcissism and appreciation pointed in the same direction. Results were interpreted in favor of the assumption that antagonistic traits are tolerated by those who possess these traits themselves. Friendships seem to be maintained at the cost of lower relationship quality.

In the second study, a longitudinal perspective was taken to examine interactional effects of narcissism and perceived friendship quality across four measurement occasions. On a within-person level, individuals that scored lower than usual on narcissism were found to subsequently perceive higher appreciation, and those who perceived lower appreciation than usual subsequently increased in antagonistic narcissism. Different than expected no effects on the other friendship quality aspects were found. Results were interpreted to suggest that the effects found in relationship formation, generalize – to some extend – to relationship maintenance, with antagonistic narcissism driving the maladaptiveness of narcissism in friendships.

Overall, this dissertation expanded previous research on narcissism and social relationships by observing relationship quality in long-term friendships including a dyadic as well as a longitudinal perspective. To answer the question of who is willing to be friends with someone high in narcissism, results of the current dissertation suggest that it would be individuals who also score high on narcissism. In regard to the question of how individuals with high narcissism perceive their friendships it can be stated that they tend to be willing to accept a lower level of friendship quality.

Zusammenfassung

Vor dem Hintergrund der Fragen, (1) wer bereit ist, eine enge Beziehung zu einer Person mit hohem Narzissmus einzugehen und (2) wie Personen mit hohem Narzissmus ihre Freundschaften wahrnehmen, war das Ziel dieser Dissertation, die wahrgenommene Beziehungsqualität in langfristigen Freundschaften in Abhängigkeit von Narzissmus zu untersuchen. Dabei wurden drei Aspekte unterschieden: agentischer, antagonistischer und neurotischer Narzissmus. Es wurde jeweils der Zusammenhang zu verschiedenen Indikatoren für die Qualität von Freundschaften (Wertschätzung, Intimität, Konflikt und Dominanz) analysiert.

In der ersten Studie wurde eine dyadische Perspektive eingenommen und beobachtet, ob sich die Qualität der Freundschaft in Abhängigkeit von dem Narzissmuslevel zweier Freunde unterscheidet. Wie angenommen, schätzten Personen in Dyaden mit höherem Narzissmus die Qualität ihrer Freundschaft geringer ein als Personen in Dyaden mit niedrigerem Narzissmus. Über alle Narzissmusaspekte hinweg wurden mehr Konflikte wahrgenommen. Dyaden mit hohem antagonistischem Narzissmus empfanden zudem weniger Wertschätzung und Intimität. Die Ergebnisse für neurotischen Narzissmus und Wertschätzung wiesen in dieselbe Richtung. Die Befunde wurden zugunsten der Annahme interpretiert, dass narzisstisches Verhalten von denjenigen toleriert wird, die selbst narzisstische Züge besitzen. Es wurde angenommen, dass Freundschaften zwar aufrechterhalten werden, jedoch auf Kosten einer geringeren Beziehungsqualität.

In der zweiten Studie wurde eine längsschnittliche Perspektive eingenommen, um die Interaktionseffekte von Narzissmus und wahrgenommener Freundschaftsqualität über vier Messzeitpunkte hinweg zu untersuchen. Innerhalb von Personen zeigte sich, dass diejenigen, die ihren Narzissmus niedriger als üblich einschätzten, in der Folge höhere Wertschätzung empfanden, und dass diejenigen, die eine niedrigere Wertschätzung als üblich empfanden, in der Folge ihr Verhalten als antagonistischer einschätzten. Anders als erwartet wurden innerhalb von Personen keine Auswirkungen auf die anderen Aspekte der Freundschaftsqualität festgestellt. Die Ergebnisse wurden dahingehend interpretiert, dass die bei der zu Beginn von Freundschaften gefundenen Effekte übertragbar auf die Phase der Aufrechterhaltung von Freundschaften sind, wobei besonders der antagonistische Narzissmus die negativen Auswirkungen von Narzissmus in Freundschaften zu treiben scheint.

Insgesamt wurde in dieser Dissertation die bisherige Forschung zu Narzissmus und sozialen Beziehungen durch die Beobachtung der Beziehungsqualität in langfristigen Freundschaften erweitert, indem sowohl eine dyadische als auch eine längsschnittliche Perspektive einbezogen wurde. Zur Beantwortung der Frage, (1) wer bereit ist, mit jemandem befreundet zu sein, der einen hohen Narzissmus aufweist, deuten die Ergebnisse der vorliegenden Dissertation darauf hin, dass es sich um Personen handelt, die sich selbst hohen Narzissmus zuschreiben. Die Antwort auf die Frage, (2) wie Personen mit hohem Narzissmus ihre Freundschaften wahrnehmen, lautet, dass sie tendenziell bereit sind, ein relativ niedrigeres Niveau der Qualität ihrer Freundschaften zu akzeptieren.

1.   Part 1: General Introduction

"No [person] is an island."

- John Donne, 1624, English poet and scholar

During the past years of repeated lockdowns and social distancing measures due to the COVID-19 pandemic, most individuals will have missed seeing their close friends, colleagues, or relatives not being part of their household. The need for affiliation and relatedness, which has been identified as a fundamental human motivation in several early (Harlow, 1958; Maslow, 1943; McClelland, 1985) and later refined theories (Baumeister & Leary, 1995; Deci & Ryan, 1991), often could not be met. The assumption that supportive and caring relationships are central to us as humans is reflected in the positive associations to health, well-being, happiness, and life satisfaction (Chopik, 2017; Demir & Weitekamp, 2007; Gillespie et al., 2014; Lu et al., 2020). It explains why we engage in voluntary relationships such as friendships, and why we put effort in keeping our closest relationships for years, decades, and beyond.

It is therefore difficult to understand why some individuals show behaviors that potentially harm their close relationships. For example, it is easy to imagine that derogating others, acting arrogantly, being selfish or aggressive, treating others insensitively or hostilely, can jeopardize social relationships. The aforementioned behaviors can all be summarized to the trait known as narcissism. Thus, narcissism as one trait representing antagonistic and socially aversive behaviors was used in the present work to gain a better understanding of potentially harmful effects of personality on the quality of social relationships. Former research investigating the role of narcissism for social relationships has mainly focused on romantic relationships (e.g., Rentzsch et al., 2021; Wurst et al., 2017), while other types of relationships got less attention. Similarly, the formation of relationships has been observed in a greater body of work than the maintenance of relationships (e.g., Czarna et al., 2016; Leckelt et al., 2015). Tackling these gaps, I focused the role of narcissism in long-term friendships and derived two research questions to further deepen the understanding of the role of personality traits in the area of social relationships. Taking a dyadic perspective (Study 1), I wanted to know if the friendship quality differs depending on the dyadic narcissism levels of friends. Taking a longitudinal perspective (Study 2), I approached

the question of whether the perception of friendship quality changes depending on the individuals' level of narcissism and vice versa.

In the following paragraphs I take up four foci, starting with (1) a definition of the construct narcissism (see 1.1.) and why it is helpful to distinguish between different aspects of it. I will continue by (2) describing two theories on social relationships (1.2.) that help to explain the human need for relatedness, before diving into (3) the more specific field of friendships (1.3.) and elaborating on indicators of friendship quality. Finally, integrating theory and existing evidence, I will look on past research on (4) narcissism and friendship (1.4.) and close with how the two studies I conducted can be derived from this background (1.5.). I then summarize the two studies, Study 1 (Part 2) and Study 2 (Part 3). Lastly, I discuss strengths and limitations of this work as well as potential implications (Part 4).

1.1.   Narcissism: An Overview

Narcissism has long been a topic of interest to scientists and the public alike. Almost everyone knows someone with high narcissistic traits that manifest in behavior that can be frustrating, unpleasant, and/or disappointing for the interaction partner – if not, the former American president represents a shining example most people can relate to. While early research understood narcissism as a one-dimensional construct characterized by heightened self-reference, exploitation, and envy in social interactions (e.g., Kernberg, 1970), over time there has been increasing evidence that narcissism is an "overly grandiose, yet simultaneously vulnerable" trait (Morf & Rhodewalt, 2001, p. 181). A differentiation between two aspects, grandiose and vulnerable narcissism, was suggested quite early, in particular in clinical research (Dickinson & Pincus, 2003; Gabbard, 1989) and was also reflected in common measurement instruments for the assessment of narcissism (e.g., HSNS; Hendin & Cheek, 1997; NPI; Raskin & Terry, 1988). Based on these questionnaires, clearly separable nomological networks for grandiose and vulnerable narcissism were found (Miller et al., 2011), which helped to better understand the paradoxes of narcissism such as being liked when first met and simultaneously being perceived as egoistic and self-absorbed (Morf & Rhodewalt, 2001).

1.1.2. The Two Core Aspects of Narcissism

Grandiose narcissism, on the one hand, has been characterized by entitlement, vanity, aggression, self-esteem, extraversion, and arrogance (Crowe et al., 2019; Dickinson & Pincus, 2003; Giacomin & Jordan, 2016; Miller et al., 2021; Miller et al., 2011). *Vulnerable narcissism*, on the other hand, was found to be associated with distrust, low self-esteem, interpersonal distress, neuroticism, negative affect, and egocentrism (Crowe et al., 2019; Dickinson & Pincus, 2003; Miller et al., 2021; Miller et al., 2011; Miller, Lynam, et al., 2018). Antagonism and disagreeableness seem common to both aspects of narcissism (e.g., Miller et al., 2011), although according behaviors seem to be shown for different reasons: While someone with a high score on grandiose narcissism may behave antagonistic for their own status pursuit, someone with a high score on vulnerable narcissism may do so due to their general distrust in others. Grandiose narcissism is often also observed together with other antagonistic traits in the context of the Dark Triad (e.g., Wehner, Maaß, et al., 2021) or Dark Tetrad (e.g., Blötner et al., 2022). Yet again, the reasons for antagonistic behavior are supposedly different (e.g., Paulhus & Williams, 2002).

1.1.3. Refining the Two Cores: A Differentiation Within Three Aspects

More recently, a differentiation of narcissism into three aspects was suggested (Ackerman et al., 2019; Back, 2018; Crowe et al., 2019; Krizan & Herlache, 2018; Weiss et al., 2019) which allowed a better categorization of the common and unique parts of vulnerable and grandiose narcissism (see Figure 1). The unique part of grandiose narcissism will here be referred to as agentic narcissism, the unique part of vulnerable narcissism as neurotic narcissism, and the common part as antagonistic narcissism (in line with Back, 2018).

Agentic narcissism has been associated with authoritativeness, self-esteem, extraversion, feelings of grandiosity, approach-motivation, and overconfidence (Ackerman et al., 2019; Crowe et al., 2019; Krizan & Herlache, 2018; Weiss et al., 2019). *Neurotic narcissism* can be described by distrust, low self-esteem, negative affect, avoidance-motivation, feelings of shame, emotional distress, and interpersonal impairment (Crowe et al., 2019; Krizan & Herlache, 2018; Miller et al., 2021; Weiss et al., 2019). *Antagonistic narcissism* was found to be related to arrogance, exploitativeness, entitlement, callousness, disagreeableness, and lack of empathy (Crowe et al., 2019; Krizan & Herlache, 2018; Weiss et al., 2019). The antagonistic aspect was referred to as

the core of narcissism by Krizan and Herlache (2018) in their Narcissism Spectrum Model. This notion is supported by the correlations between the three aspects, which tend to be higher between antagonistic narcissism and the other two aspects, $r \sim .4$-$.5$, compared to the correlation between agentic and neurotic narcissism, $r \sim .3$ (e.g., Crowe et al., 2019).[1]

Figure 1

Hierarchical Model of Narcissism
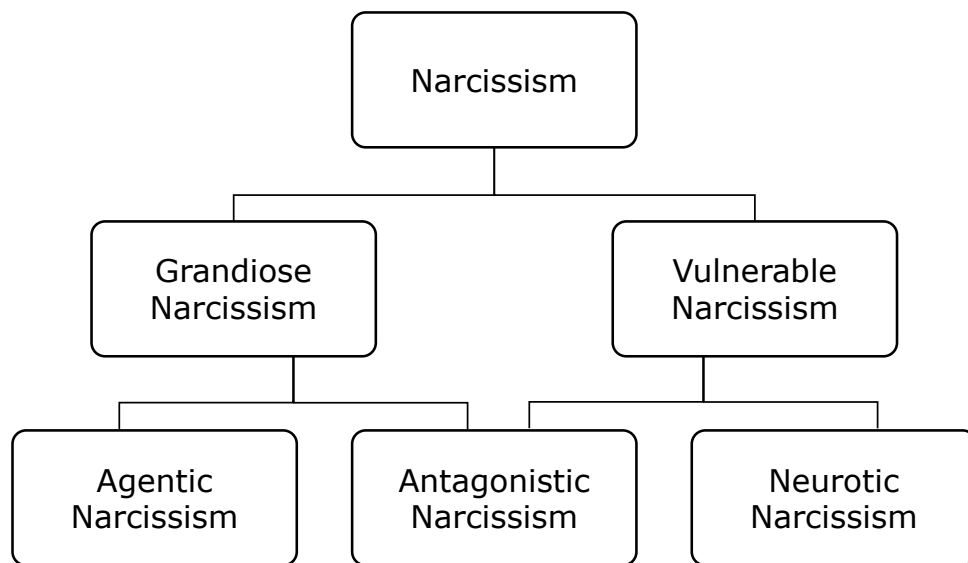
Note. Adapted from Miller et al. (2021). For an empirical underpinning see, for example, Crowe et al. (2019).

Taken together, an increasingly fine-grained picture of the constructs and its aspects has emerged since narcissism was introduced to the field of personality psychology. While it was initially treated as a unidimensional construct, the related behavior and its relations to other constructs implied that a differentiation into two aspects is helpful, which more recently was expanded to three aspects explaining most variance (e.g., Crowe et al., 2019). In their recent overview on narcissism research Miller et al. (2021) strongly recommended to differentiate between those three aspects of narcissism based on empirical findings, which I will describe to some extend in the following.

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[1] Note that there are also the concepts of communal (Gebauer et al., 2012; Rentzsch & Gebauer, 2019) and collective narcissism (Golec de Zavala et al., 2009; Golec de Zavala & Lantos, 2020). Their fit into the currently prevailing models needs further evaluation.

1.1.4.   The Narcissistic Admiration and Rivalry Concept

The usefulness of the differentiation of three aspects has been shown in particular with regard to differences in agentic and antagonistic narcissism. Back et al. (2013) developed the narcissistic admiration and rivalry concept (NARC), in which they proposed two strategies supporting the narcissistic goal of maintaining a grandiose self: (1) the approach of social admiration through self-promotion leading to social potency, and (2) the avoidance of social failure through self-defense leading to social conflict. The first strategy is driven by behavior typically shown by individuals with high scores on narcissistic admiration (i.e., agentic narcissism), the second by individuals with high scores on narcissistic rivalry (i.e., antagonistic narcissism). Back and colleagues could show substantial differences of both aspects with regard to the traits' nomological networks, underlying motives, related behaviors, and intra- and interpersonal outcomes (e.g., Back, 2018; Back et al., 2013; Leckelt et al., 2015; Wurst et al., 2017). The idea of narcissism as an initially positive and long-term negative influence on social relationships was, however, first introduced by Paulhus (1998) who observed that individuals with high scores on narcissism were rated as agreeable and well-adjusted when first met, but were rated negatively after seven weekly meetings.

With regard to social relationships, the initial likability due to agentic behaviors and the problems which arise in the long term due to antagonistic behaviors stand out. Even in a short period of only three weeks it was shown that the popularity of individuals with high scores on narcissism declined (Leckelt et al., 2015). This was related to decreases of initially positive effects of agentic behaviors, as well as increases of negative effects of antagonistic behaviors. Leckelt et al. (2015) concluded that the adaptive effects of narcissism on social relationships are evident only in very early levels of acquaintance. The negative effects of antagonistic narcissism were later replicated in a 16-week longitudinal field study (Leckelt et al., 2020).

Similarly, for romantic relationships it was shown that agentic narcissism positively, and antagonistic narcissism negatively affected relationships (Wurst et al., 2017). Across seven studies the authors found evidence for short-term romantic appeal, operationalized through variables such as attractiveness and mate value, due to agentic narcissism, and long-term romantic problems, such as low relationship quality and more conflicts, due to antagonistic narcissism.

The problems of antagonistic narcissism for friendships and romantic relationships were also shown by Back et al. (2013) who found negative relations to empathy, forgiveness, and gratitude and a positive relation to interpersonal distrust of antagonistic but not agentic narcissism. Moreover, they could show that individuals with high scores on antagonistic narcissism tended to react to conflicts with revenge-oriented but not with directly problem-focused behaviors (Study 5). Others evaluated individuals with high scores on agentic narcissism as sociable, competent, and attractive, while those with high scores on antagonistic narcissism were perceived as aggressive, devaluing others, and untrustworthy and tended to be disliked (Study 6; Back et al., 2013). To sum up, consequences for social relationships, particularly in the long run, tend to be rather negative and potentially lead to lower relationship quality.

Overall, the evidence for the usefulness of the separate pathways of the NARC (Back et al., 2013) tends to be lager within romantic relationships (e.g., Grosz et al., 2015; Rentzsch et al., 2021; Sauls et al., 2019; Seidman et al., 2020; Vrabel et al., 2020; Vrabel et al., 2021; Wurst et al., 2017; Zeigler-Hill et al., 2020) compared to peer relationships (Leckelt et al., 2020; Leckelt et al., 2015; Rogoza & Danieluk, 2021) or friendships (Sauls & Zeigler-Hill, 2020). While findings on romantic relationships might be transferable to friendships, this needs to be tested, in particular for long-term friendships. For example, friendships may offer a wider scope to show narcissistic behavior compared to romantic relationships (Maaß et al., 2018), as they are usually less exclusive and committed.

1.1.5. Other Models of Narcissism in Social Relationships

Some earlier models of (grandiose) narcissism which focus on social relationships with more or less emphasis can certainly be understood as a foundation for the work of Back and colleagues (2013) and are described in the following. Although these models do not differentiate between different aspects of narcissism, they are informative beyond the NARC in terms of the intersection of narcissism and social relationships.

The *dynamic self-regulatory processing model* (Morf & Rhodewalt, 2001; Morf et al., 2011) proposed that individuals with high narcissism scores use intrapersonal and interpersonal means (i.e., social relationships) to create and regulate their self-concept. The model implies that individuals with high narcissism scores tend to engage with others who support their self-enhancement and their overly positive self-image.

Relationship problems occurring long-term are attributed to insensitivity of the individuals with high narcissism to social constraints, and negative characteristics of the interaction partner (e.g., imperfection) that become apparent over time and may make them seem inferior (Campbell, 1999).

Criticizing the dynamic self-regulatory processing model for not adequately accounting for the differentiation between narcissism and self-esteem, Paulhus (2001) proposed the *asymmetric self-other liking model* (ASOL). This model is based on the idea that individuals with high narcissism tend to have asymmetric relationships, that is, they hold a positive self-view and a negative view of others. Individuals with high self-esteem, by contrast, tend to have relationships at symmetric levels. Paulhus (2001) indicated that his model is in line with earlier works suggesting that symmetric relationships are maintained longer than those that are asymmetric, even when both views are negative (Leary, 1957).

In the *agency model* (Campbell et al., 2006; Campbell & Foster, 2007) it has been argued that individuals with high scores on (grandiose) narcissism use interpersonal strategies, such as self-promotion or game playing, and interpersonal skills, such as confidence or charmingness, to regulate self-related processes, i.e., maintaining status and esteem. The authors also mentioned that individuals with high scores on narcissism tend to punish others with aggression when their self-concept is threatened, potentially leading to long-term negative consequences for social relationships. Although the latter aspect was not explicitly included in the agency model, the NARC (Back et al., 2013) reflects this idea with an ego-boosting and an ego-threatening pathway. Furthermore, this also aligns with the proposition of narcissism being a mixed blessing (Paulhus, 1998).

The *contextual reinforcement model* (Campbell & Campbell, 2009) proposed that individuals with high narcissism scores have the most benefits and lowest costs in new or volatile social contexts (emerging zone) in contrast to long-term relationships (enduring zone). Furthermore, it suggested that the same pattern would apply for the individuals' social partner experiencing more benefits in the beginning (e.g., excitement), but more costs (e.g., little emotional support; Foster et al., 2006) as the relationship progresses. Eventually, the model assumes that the increasing mismatch of costs and benefits makes it more and more appealing for both relationship partners to return to the dynamics of the beginning or to end the relationship.

While the contextual reinforcement model takes the perspective of both relationship partners into account, the *chocolate cake model* (Campbell, 2005) focuses on the perspective of someone engaging with an individual with high narcissism. The model proposes that the (romantic) relationship to an individual with high narcissism seems exciting and pleasurable in the beginning but has negative consequences in the long-term: just like a cake gives joy in the moment it is being eaten but leads to a high caloric and bad nutritional intake – and thus costs in the long run. Both, the contextual reinforcement model and the chocolate cake model imply that research on narcissism and social relationships should not only observe individuals but ideally dyads, as this allows to examine potential interaction effects.

Similar as for the NARC (Back et al., 2013), research based on these earlier models was more comprehensive with regard to romantic relationships (e.g., Dufner et al., 2013; Foster et al., 2006; Lamkin et al., 2015; Rohmann et al., 2010; Seidman, 2016) than to other relationships such as friendships (Czarna et al., 2016; Maaß et al., 2016). For an overview of the latter three models in the context of romantic relationships see also Brunell and Campbell (2011).

Overall, the majority of the previously described models have in common that they understand (grandiose) narcissism as leading to interactional problems that usually do not occur in emerging relationships, but when it comes to their maintenance in the long run. In a nutshell, Campbell et al. (2006) described "a relative lack of interest in close, warm, or intimate relationships" (p. 62) as a fundamental characteristic of narcissism leading to problems in maintaining social relationships. Therefore, I considered the phase of relationship maintenance particularly relevant to study, to disentangle previously shown effects of narcissism on becoming friends from staying friends.

1.2.   Social Relationships – A Basic Need

Why do people engage in social relationship and spend a reasonable amount of time and effort into making them work? And how is this potentially impacted by higher or lower narcissism scores? To understand the role of the different narcissism aspects for social relationships, and long-term friendships in particular, it is necessary to firstly define the purpose of social relationships. I will thus briefly sum up two broader theories on why social relationships matter to us as humans (1.2.1. and 1.2.2.),

before looking at the role of friendships (1.3.) and what this implies for research on narcissism (1.4.) and this work in particular (1.5.).

1.2.1. Self-Determination Theory

The self-determination theory proposes three basic psychological needs, which are thought to be innate and universal: competence, autonomy, and relatedness (Deci & Ryan, 1991; Ryan & Deci, 2000). If no or few external impediments are present, these needs are assumed to motivate an individual to initiate behavior that promotes health, well-being, and personal growth. The ideal state is reached when all three needs are equally satisfied, as the individual can then act driven by intrinsic or integrated (extrinsic) motivation.

The need for *competence* has been defined as an individuals' striving to experience efficacy and to control outcomes, the need for *autonomy* as the striving to feel being the cause of an action and to be agentic, and the need for *relatedness* as the striving to relate to others and the feeling of others relating to the self (Deci & Ryan, 1991). The latter also includes caring for others, feeling authentically connected, and feeling generally and coherently integrated into the social world. With regard to narcissism in particular, this need for relatedness is interesting, as maintaining healthy social relationships is often challenging for individuals with high narcissism as well as for their interaction partners (e.g., Campbell & Campbell, 2009; Paulhus, 1998). Specifically for individuals with high vulnerable narcissism a frustration of the need for relatedness has been expected (Sedikides et al., 2019), but not yet tested.

Within the framework of self-determination theory, the need for relatedness is further specified by the social context. The social context is postulated to catalyze intra- and interpersonal differences in motivation and eventually in overall development (Deci & Ryan, 1991; Ryan & Deci, 2000). The social context can support the autonomy of an individual if choices are provided, pressure is minimized, or initiation of behavior is encouraged (e.g., by a teacher for a student). The involvement of significant others, their provision of resources such as time and energy, can support a feeling of competence (Deci & Ryan, 1991). Thus, the social context that is shaped by significant others is an important factor moderating whether an individuals' aspiration to be autonomous, competent, and connected can be realized (e.g., Reis et al., 2000). This importance of relatedness for the other two aspects of self-determination makes narcissistic behavior (in particular behavior related to antagonistic and neurotic

narcissism) presumably coming with a very high price that individuals pay for themselves and exact from others by ignoring their needs or rejecting them. Elliot and Thrash (2001) argued that (agentic) narcissistic behavior allows for fulfilling the need for competence but undermines the need for relatedness. They assumed that achievements, which are important to fulfill the need for competence, happen in a social context, which explains why individuals with high narcissism scores care about social contexts, even though they show callous and arrogant behavior in actual interactions. A deeper understanding of narcissism in social relationships and how individuals with high narcissism scores maintain (at least some of) their relationships could help to shed further light on this paradox. The need for relatedness and being connected to others, which according to the self-determination theory is central for internal motivation (Ryan & Deci, 2000), was specified in more detail in the theory of the need to belong, to which I will turn in the following.

1.2.2.   The Need to Belong

The importance of relatedness for health and well-being was subsumed under the need to belong by Baumeister and Leary (1995). They described the need to belong as one of the most influential, powerful, and pervasive human motivations affecting cognition, emotion, and behavior. They argued that the need to belong can be explained in light of our evolutionary past, as being part of a social group was essential for both survival and reproduction.

The need to belong includes not only a striving for frequent and affectively positive interactions, but also ensures that these interactions occur in enduring and meaningful relationships of mutual care (Allen et al., 2021; Baumeister & Leary, 1995; Gere & MacDonald, 2010). In other words, long-term relationships can provide a level of satisfaction that is not possible in interactions with un- or newly acquainted others. To fulfill the need to belong, an individual must believe that the other likes them and cares about their well-being. Furthermore, the need to belong might lead to an aversion to break social ties, which becomes obvious in relationships that cause pain but are nevertheless maintained (e.g., to an abusive partner). While most relationships can potentially be replaced, mainly the time to build a similarly close and intimate relationship makes replacement unattractive. This is seemingly contradictory to behavior shown by individuals with high narcissism, which according to the

contextual reinforcement model (Campbell & Campbell, 2009; see also 1.1.5.), tend to return to dynamics typical for the beginning of a relationship.

Baumeister and Leary (1995) argued that the formation and maintenance of stable and committed social relationships positively affects well-being (for empirical support see Patrick et al., 2007) and is likewise necessary to prevent deprivation, loneliness, and ill effects such as mental health deficits (see also Baumeister et al., 2007). At an emotional level, for instance, happiness has been found to be related to close relationships (e.g., Demir et al., 2018), while threats to relationships were found to be related to anxiety (e.g., Gnilka & Broda, 2019). With regard to maladaptive or destructive behaviors, Baumeister and Leary (1995) suggested that they could be either futile efforts to form or preserve relationships, or mere desperation and frustration due to the unfulfilled need. This might be the case for individuals with high narcissism and may become visible in particular in individuals with extremely high narcissism scores, i.e., those with a narcissistic personality disorder (e.g., Ritter et al., 2011; Ronningstam, 2016). Yet, when the need to belong is understood as dimensional construct, individuals with higher scores were found to place more importance on secure and save relationships, for example with friends, than individuals with lower scores (Study 7; Leary et al., 2013). Individuals with high narcissism scores may just have a lower need to belong compared to individuals with lower narcissism (see Twenge & Campbell, 2003). Based on correlational analyses, this is more likely the case for grandiose than vulnerable narcissism, as the latter was found to be positively associated with the need to belong (Casale & Fioravanti, 2018).

To sum up, both self-determination theory and the theory of the need to belong underline the importance of social relationships for a healthy life, well-being, and personal growth. Next to familial ties and romantic relationships, friendships make a decisive contribution to the sense of belonging for most people. In the following, I will therefore provide a brief definition of friendships, describe their potential development, and focus on aspects of friendship quality which are necessary to maintain friendships and were therefore used in the two studies I conducted.

1.3.   Friendships

Friendships can be described as close, informal, and voluntary relationships to peers which are mostly nonsexual (Blieszner & Roberto, 2004; Wrzus et al., 2017).

Compared to family or romantic relationships, friendships are usually less exclusive and binding (Harris & Vazire, 2016). Also the commitment might be smaller as more alternatives are available which can potentially replace a friend (Lin & Rusbult, 1995). The number and importance of friends tends to increase during the transition to adulthood and to decrease again in late adulthood (Wagner et al., 2014; Wrzus et al., 2013). When friendships are rated as important, they are associated with higher happiness and well-being in early and late adulthood (Chopik, 2017).

1.3.1.   A Friendship Process Model: The Four Phases of Friendships

When looking at the development of friendships, three or four phases have often been distinguished (e.g., Adams & Blieszner, 1994; Fehr, 1996). In the friendship process model (Fehr, 1996, 2012) it has been suggested that (1) formation is followed by (2) maintenance and (3) deterioration, which may be followed by (4a) restoration or (4b) dissolution[2]. At all phases environmental, situational, individual, and dyadic factors have been identified, which have to converge to build and maintain a friendship.

In the *formation* phase residential proximity (environmental), interaction frequency, availability (situational), social skills, responsiveness (individual), mutual liking, and self-disclosure (dyadic) were identified as key factors (Fehr, 2012). During the *maintenance* phase several changes tend to occur. While, for example, self-disclosure and contact frequency have been shown to stay important, other factors such as provision of support, positivity, and conflict management gain importance (Fehr, 1996; Oswald et al., 2004; Perlman et al., 2015). In the *deterioration* phase, decreases of the formerly helpful factors such as self-disclosure, interaction or support, as well as passive avoidance or nonconstructive resolution of conflicts can impair friendships (Blieszner & Roberto, 2004; Fehr, 2012). Residential separation or a new romantic partner of one of the friends can also initiate deterioration (Perlman et al., 2015). If these factors and according behavior persist, they often lead to *dissolution* of the relationship (for a recent model on friendship dissolution see Vieth et al., 2022). *Restoration* may occur if behaviors are changed, conflict solution or reconciliation is actively sought, or the importance of the friendship is reassessed (Fehr, 2012).

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[2] Note that there is no fixed time frame for these phases. This can probably be explained by factors such as contact frequency or physical proximity, which influence speed and depth of friendship development.

1.3.2.   What Makes a Friendship Last?

When taking a closer look at friendship maintenance and what defines a well-functioning friendship, the perceived quality of a friendship is important: Do I feel appreciated and supported? Can we have meaningful talks and have a pleasurable time together? While friendship quality can be assessed relatively global by asking for relationship satisfaction, it can also be rated on dimensions which represent important aspects of friendships (Perlman et al., 2015). These aspects can be positive, such as support or intimacy, and negative, such as conflict or inequality (Berndt, 2002) and friendships may vary in the relative amount of them. The positive aspects may foster relationship maintenance, the latter, if low, may prevent relationship deterioration and dissolution.

A common measure used to assess both positive and negative aspects of friendship quality is the Network of Relationships Inventory (NRI; Furman & Buhrmester, 1985). An abbreviated version with four friendship quality aspects used in the Panel Analysis of Intimate Relationships and Family Dynamics (pairfam; Walper et al., 2010) was also applied in the studies of this dissertation. Therefore, I will describe the four aspects - appreciation, intimacy, conflict, and dominance - in further detail in the following.

Appreciation

Appreciation can broadly be described as a feeling of a positive emotional connection characterized by affection, warmth, and acknowledgement of someone else (Adler & Fagley, 2005; Parker & de Vries, 1993). Feeling appreciated includes a feeling of being cared about, being valued, being understood, and being supported. Expressing and feeling appreciation has been claimed to build social ties (Adler & Fagley, 2005) and to play a proactive role in relationship maintenance (Kayabol & Sümer, 2020). Appreciation was also identified to contribute to the need of relatedness (Reis et al., 2000), which has been described as part of the self-determination theory (see 1.2.1.).

Appreciation has been found to be related to life satisfaction, $r = .23$, and positive affect, $r = .28$ (Adler & Fagley, 2005). The feeling that one's qualities are appreciated, operationalized through the sense of uniqueness, was further found to mediate the relation of friendship quality and happiness (Demir et al., 2013). People seem to enjoy the feeling of being valued by their close friends and appreciation seems to be one reason why positively perceived friendships are associated with happiness. In romantic

relationships feeling appreciated and appreciating the partner was similarly related to relationship satisfaction, $r \sim .60$ (Gordon et al., 2012; Kayabol & Sümer, 2020). Furthermore, individuals that feel appreciated by their partner, tend to be more appreciative and committed in turn (Gordon et al., 2012). More specifically, it was found that appreciating the strengths of the romantic partner predicts relationship satisfaction, commitment, and intimacy (Kashdan et al., 2018). It is not clear whether the latter findings on romantic relationships are directly transferable to friendships. However, I would assume similar mechanisms.

Intimacy

Intimacy has been conceptualized as freely expressing and revealing personal thoughts, feelings, and concerns (i.e., self-disclosure), mutual acceptance, and sensitivity to the needs of the other (Fehr & Harasymchuk, 2019; Mendelson & Kay, 2003; Parker & de Vries, 1993). Moreover, Fehr (2004) proposed that emotional support, next to self-disclosure, is central to friendship intimacy. This suggests a potential overlap of intimacy and appreciation, which has also been defined by a feeling of being supported (see above). As the support aspect is not reflected in the NRI (Furman & Buhrmester, 1985), I will focus more on self-disclosure in the following.

According to the social penetration theory (Altman & Taylor, 1973; as cited in Carpenter & Greene, 2016), usually nonpersonal and superficial information is shared in first encounters with another person. With increased contact, and when the interaction is enjoyed, breadth and depth of the disclosed information increases. The social penetration theory was supported by a study showing that the relation of intimacy and friendship intensity increased across a period of three months (Hays, 1984, 1985). It has been assumed that mutual self-disclosure, which is important in the beginning of a friendship, becomes less immediate as the relationship progresses, even though reciprocal self-disclosure remains essential for relationship maintenance (Finkenauer et al., 2018). Empirically, it was shown that self-disclosure among other factors predicted friendship maintenance during the transition to college (Oswald & Clark, 2003). In general, self-disclosure was found to be related by $r = .32$ to friendship quality (Festa et al., 2012) and by $r \sim .30$ to relationship satisfaction in romantic couples (Imai et al., 2021). The relation of self-disclosure and friendship quality remained substantial after controlling for gender, class, and personality (Festa et al., 2012). Overall, women tend to self-disclose more than men (Reisman, 1990). Recently,

Willems et al. (2020) postulated that self-disclosure not only promotes intimacy and trust, but also contributes to relationship maintenance as it can reduce and de-escalate conflict.

Conflict

At the interpersonal level, conflict has been defined as disagreement between two individuals which is expressed in contradictory or incompatible views and behaviors (Laursen & Adams, 2018). Some authors further distinguished between two forms of conflict: (1) Violating a central expectation of the friend, such as disclosing private information to someone else, has been termed transgression; (2) Opposing opinions, needs, or preferences of friends have been termed conflicts of interest (e.g., Santucci et al., 2021). While transgressions were found to be associated with friendship dissolution, conflicts of interest were related to friendship maintenance strategies (Santucci et al., 2021). Thus, it seems to depend on the severity of a conflict to what extend it influences a friendship.

Moreover, the effective management of conflicts has been identified as a maintenance strategy (Fehr, 2012). Constructive conflict management was found to be related to friendship quality, $r = .23$ (Festa et al., 2012), and constructive problem-solving to friendship satisfaction, $r = .24$ (Gao et al., 2017). A further study found positive relations of maintenance behaviors and constructive conflict-solving styles (voice and loyalty) and negative relations with destructive conflict styles (neglect and exit; Oswald & Clark, 2006). Thus, a constructive conflict resolution tends to help to maintain a friendship, while a destructive approach makes a friendship vulnerable to dissolution. In a further study conflicts were found to be negatively related to positive affect and positively related to negative affect (Berry et al., 2000). Individuals who had no conflicts during the one-month study period experienced higher positive affect than individuals that reported one or more conflicts. It stands to reason that a conflict negatively affects the current mood, yet, as conflict is an almost inevitable part of close friendships (Bagwell et al., 2005), its management is crucial. Similar arguments were also made by Oswald (2017) who suggested that in the event of a conflict, friends should similarly engage in in effective problem-solving behaviors and in maintenance strategies such as self-disclosure. To sum up, conflict severity, conflict management, as well as conflict frequency can all potentially influence friendship quality.

Dominance

Dominance in social relationships has been described as a desire for influence, power, and control over others, and over the way things are done when being with the other (Gilad & Maniaci, 2022; Parker & de Vries, 1993). In order to assert themselves, individuals with a high dominance score are willing to act aggressively, manipulative, and forcefully (Gilad & Maniaci, 2022; Maner, 2017).

In adolescents coercive power was found to be negatively related to friendship satisfaction, $r = -.23$ (Ferguson et al., 2018). In romantic relationships control behavior was found to be related to lower relationship satisfaction, $r \sim -.3$ (Cundiff et al., 2015). With regard to gender, men reported to have more control in their friendships than women did (Parker & de Vries, 1993). More generally, dominance was found to be negatively related to empathic concern, $\beta = -.45$, perspective-taking, $\beta = -.40$, and other orientation, $\beta = -.33$ (Gilad & Maniaci, 2022). Similar to conflict, dominance tends to lead to more negative affect, which in turn was found to be related to lower relationship satisfaction (Sadikaj et al., 2017).

Overall, based on previous studies appreciation, intimacy, conflict, and dominance seem to be useful and valid indicators of friendship quality. A detailed description of the friendship quality aspects with relation to the three narcissism aspects (agentic, antagonistic, and neurotic) can be found in the introduction of Study 1 (see 2.2.). In summary, based on previous evidence, we assumed a positive association of all narcissism aspect with conflict, and a negative association with intimacy. For antagonistic narcissism, we also assumed a negative association with appreciation, and for assertive narcissism, a positive relation to dominance. A more general overview of previous research on narcissism and friendships can be found in the following.

1.4.   Friendships and Narcissism

"Close relationships are those areas of life where narcissists are least successful and where their social partners have the highest costs and the lowest benefits" (p. 1023; Back et al., 2013). This quote describes why observing social relationships in individuals with high narcissism scores is so fascinating, given the importance of well-functioning social relationships for health and well-being, which have been described in the self-determination theory (see 1.2.1.) and the need to belong (1.2.2.). To delve deeper into the intersection of narcissism and friendships, in the following I will sum up previous

research, starting with (1) the summary of a book chapter on narcissism and friendships (Maaß, Wehner, & Ziegler, 2018), followed by (2) research, which goes beyond the book chapter, and helps to understand the role of the three narcissism aspects (agentic, antagonistic, neurotic; see 1.1.3) within friendships.

1.4.1.   Who is Willing to Be Friends With an Individual With High Narcissism?

In our book chapter *Narcissism and Friendships* (Maaß et al., 2018) we outlined the state of research on narcissism's influence on friendships and provided ideas for future research on the topic. We concluded that research on narcissism and friendships is relatively sparse but that the topic is particularly interesting to observe, as friendships potentially allow individuals with high narcissism to act out their agentic and antagonistic orientation. In comparison to romantic relationships, friendships tend to afford less investment as they are less exclusive and committed (Harris & Vazire, 2016). In comparison to relationships to subordinates, friendships tend to be less risky, in the sense that narcissistic behaviors do not have the same damaging effects (Chatterjee & Hambrick, 2007). Thus, we argued that narcissistic behavior may be more prominent in friendships than in other relationships.

We then highlighted the (potential) influences of narcissism during different stages of friendships (Fehr, 2012) focusing on friendship maintenance. While there was some evidence that individuals with high narcissism scores show behaviors that may help to maintain friendships (e.g., being empathetic; Hepper et al., 2014), many narcissistic behaviors have been found to be rather detrimental (e.g., Campbell & Foster, 2002; Leckelt et al., 2015; Park & Colvin, 2015). The overall mixed findings led us to the question of who may be willing to be friends with an individual with high narcissism. A first attempt to answer this question was provided by Maaß et al. (2016), who found that similarity of friends in agentic narcissism predicted similar deviations from the norm in the Big Five personality traits. The authors concluded that individuals scoring high on narcissism tend to be friends with others who likewise score high in narcissism and have a similar personality. We argued that this is in line with previous findings that individuals with high scores on narcissism tend to tolerate their own traits in others (e.g., Carlson et al., 2011; Hart & Adams, 2014) and are therefore more likely able to maintain their friendships.

With regard to future research, we suggested to focus on person and on situation factors using the narcissism in situations framework (NARCIS). The

framework provides potential behaviors (of individuals scoring high on narcissism and their friends) at different friendship stages, which either promote friendship maintenance or eventually lead to friendship dissolution. Furthermore, we suggested to observe different aspects of narcissism – which I addressed in this dissertation –, to work with self- and other-reports, and to use observer ratings. We further pointed out the need for longitudinal research on friendship maintenance in the context of narcissism – which I also approached in this dissertation.

1.4.2.   Agentic, Antagonistic, and Neurotic Narcissism and Friendship Quality

Beyond the studies which have been described in the realm of the NARC (see 1.1.4.), only relatively few studies have directly observed the three narcissism aspects[3] in relation to friendship quality, which is especially the case for long-term relationships. Due to this relative scarcity of research on friendships I will also include some research on romantic relationships in the following summary.

Friendship satisfaction was found to be positively related to agentic narcissism, $r = .17$, and negatively to antagonistic narcissism, $r = -.20$ (Sauls & Zeigler-Hill, 2020). Relations of investment and commitment with the two narcissism aspects pointed in the same directions. The same study also highlighted that agentic and antagonistic narcissism were associated with an agentic orientation towards friendships (which included aspects such as power and self-assertion), while only antagonistic narcissism was negatively related to a communal orientation (which included aspects such as honesty and closeness). In a further study neurotic narcissism was found to be negatively related to compassion, $r = -.27$, which was used as an indicator of friendship quality (Salazar, 2016).

In a recent study on romantic relationships all three aspects of narcissism were assessed: Agentic narcissism was unrelated to relationship satisfaction, antagonistic narcissism was negatively related to satisfaction in men but not in women, and neurotic narcissism was negatively related to relationship satisfaction across gender (Balzen et al., 2022). The latter was also found in longitudinal actor-partner interdependence models (i.e., a substantial actor effect occurred, $\beta = -.20$). In a similar study, agentic narcissism was found to be negatively related to relationship satisfaction

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[3] The classification of the various measures of narcissism into agentic, antagonistic, and neurotic narcissism here was based primarily on the classification by Krizan and Herlache (2018, Fig. 2).

in men, and neurotic narcissism was negatively related to relationship satisfaction across gender (Casale et al., 2020; see also Gewirtz-Meydan & Finzi-Dottan, 2018). In multilevel actor-partner interdependence models, agentic narcissism was positively, and antagonistic narcissism was negatively related to relationship satisfaction (Rentzsch et al., 2021; see also Wurst et al., 2017). Overall, in particular the negative effects of antagonistic and neurotic narcissism on relationship quality appear profound. While findings on friendships point to this negative relation, the results from narcissism in romantic relationships support the idea that antagonistic and neurotic narcissism have a negative effect on relationship quality. This dissertation hopes to shed more light on the different aspects of narcissism and their effect on friendship quality and thus to contribute to this research.

1.5.   Extension of Previous Findings

In this section, I will explain why I approached the topic the way I did and in what way the findings mentioned above build the foundation of this dissertation. In the first part of the introduction (1.1.), I elaborated that there are theoretical reasons and empirical evidence for the three-folded approach of narcissism (e.g., see also Miller et al., 2021). This notion builds the foundation of both studies. Yet, in the longitudinal study (Study 2) only the agentic and the antagonistic aspect were considered to reduce participant burden. Furthermore, both studies included friendship quality aspects that have been considered critical for friendship maintenance, and hence, for long-term friendships (e.g., Fehr, 2012; see 1.3.). This is particularly interesting as, to my knowledge, no research has yet directly examined the intersection of narcissism and different aspects of friendship quality in long-term relationships. However, the question remains why it is useful to observe narcissism and long-term friendship quality from a dyadic (Study 1) and a longitudinal perspective (Study 2).

First, one basis for long-term friendships including individuals with high narcissism might be the argument posed by Kunda (1990), that people are motivated to value the positivity, and likewise underplay the negativity of their own traits. In line with this, it was shown that individuals with high narcissism do not only accept narcissistic characteristics in themselves (Carlson, 2013), but also do they to a higher extend tolerate these characteristics in others (e.g., Hart & Adams, 2014). The idea of tolerance for antagonistic traits when possessing these traits oneself led me to the

question of whether the perception of friendship quality differs depending on the dyadic narcissism levels of friends (Study 1). In other words, I assumed that the tolerance of narcissistic traits due to high scores on narcissism helps to maintain a friendship, but at the cost of lower relationship quality. According to this hypothesis, friends with similarly high narcissism scores should evaluate their friendship quality to be lower than friends with lower narcissism scores.

Second, in the NARC (Back et al., 2013) it has been assumed that agentic narcissism leads to social potency and ego-boost which in turn promote agentic narcissism, and that antagonistic narcissism leads to social conflict and ego threat promoting antagonistic narcissism in turn. A longitudinal approach is needed to evaluate whether these processes, for which empirical support has been found in short-term acquaintances (e.g., Leckelt et al., 2015), also reignite in relationships which are more settled and tend to be stable. Therefore, I aimed to observe friendships having lasted for at least two years to ensure first processes related to narcissistic behaviors may be overcome and a certain stability is reached. In particular, I was interested in how individuals with high narcissism would perceive their friendships, and whether narcissism changes when the perception of friendship quality changes and vice versa, focusing on differences at the intraindividual level (Study 2).

Overall, with both approaches, the dyadic and the longitudinal, I aimed to better understand how narcissism affects long-term friendships with a focus on the interaction of narcissism and friendship quality. My goal was to gain insights into how the basic need of relatedness (see 1.2.) is met in voluntary and non-exclusive relationships among individuals with high narcissism.

2.   Part 2: Taking the Dyadic Perspective

2.1.   Summary of Study 1

How Do Different Aspects of Narcissism Affect Relationship Quality in Long-term Friendships? Quality Is Lower in Dyads with Higher Narcissism Scores

Previous research has shown that individuals scoring high on narcissism tend to tolerate their own traits in others (e.g., Hart & Adams, 2014; Kay, 2021). This tolerance may help individuals scoring high on narcissism to maintain relationships with others scoring similarly high on narcissism (Doroszuk et al., 2019; Maaß et al., 2018). In line with this, we hypothesized that the tolerance of narcissistic traits would help two individuals with high narcissism scores to maintain their friendship, but at the expense of low friendship quality. While previous research has focused on potential relationships (Kay, 2021; Lamkin et al., 2018; Lyons & Blanchard, 2016; Miller, Sleep, et al., 2018; Sleep et al., 2017), we aimed to extend those findings by observing friendships lasting for at least two years. We assumed that the occurrence of lower friendship quality would be particularly pronounced in individuals with similarly high scores on antagonistic narcissism (compared to individuals with lower scores), which has been found to be the most detrimental aspect of narcissism in the long term (e.g., Leckelt et al., 2020).

Participants (N = 830, i.e., 415 dyads) provided information on agentic, antagonistic, and neurotic narcissism and rated the friendship quality to their friend. We used the duration of the friendship as operationalization of the friendship maintenance stage. This duration accounted for at least two years, and for 9.23 years (SD = 7.11) on average. We assessed four aspects of friendship quality: appreciation, intimacy, conflict, and dominance. To classify participants as scoring low, medium, or high on the narcissism aspects we used an independent sample (N = 1,682) as a reference group. Participants were then grouped based on their dyadic narcissism levels. We tested for differences between four groups – with low, medium, high, or mixed dyadic narcissism levels – predicting friendship quality by using ANOVAs and corresponding post-hoc tests.

As expected, most differences were found for antagonistic narcissism, with dyads in the high scoring group perceiving less appreciation (d = .30-.32) and intimacy (d = .27-.44), and more conflicts (d = .32-.47) in comparison to the dyads with medium or

low scores. The perception of more conflicts also applied to dyads scoring high on agentic (d = .28-.31) and neurotic narcissism (d = .37-.49). With regard to dominance only one substantial difference emerged: Dyads with high scores on neurotic narcissism differed from those with low (d = .29) but not from those with medium scores. Overall, results support our hypothesis that long-term friends with high scores on narcissism are able to maintain their friendship but perceive their friendship quality to be lower compared to dyads with lower narcissism scores.

Our results suggest that the separation of the three narcissism aspects is meaningful in the context of long-term friendships, and as in previous research (e.g., Leckelt et al., 2015), antagonistic narcissism turned out to be the aspect with the most negative impact on friendship quality. Our assumption that tolerance of one's own traits would be reflected in friendship maintenance, the tolerance hypothesis was supported: Dyads, in which both individuals had high scores on narcissism tended to perceive their friendship quality to be lower than individuals from dyads scoring medium or low on narcissism. Thus, we could extend previous findings on potential relationships to existing friendships. The major limiting factors to the study are the overrepresentation of participants identified as female (almost 80 percent) and the rather small groups with mixed levels of narcissism (n = 14-30). A fruitful extension of this cross-sectional study could be to take the development of friendships in relation to narcissism into account, which we pursued in the second study.

2.2. Study 1

How do Different Aspects of Narcissism Affect Relationship Quality In Long-Term Friendships? Quality Is Lower in Dyads With Higher Narcissism Scores

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Abstract

Narcissism has been shown to be associated with a variety of problems in social relationships. Although many narcissistic characteristics, such as the willingness to exploit others or the relative lack of empathy, are unappealing, individuals with narcissistic personality features often manage to maintain long-term relationships. Previous research suggested that individuals scoring high on narcissism tolerate their own traits in others which makes their relationships last. We assumed that this tolerance helps to keep a friendship alive but on a rather low level of quality. Therefore, we hypothesized that individuals in dyads scoring high on narcissism would perceive their friendship quality to be lower than individuals from dyads with lower narcissism levels. We collected data from 830 individuals participating in friendship dyads lasting for at least two years and assessed three aspects of narcissism (i.e., assertive narcissism, antagonistic narcissism, and neurotic narcissism) and four aspects of friendship quality (appreciation, intimacy, conflict, and dominance). Most effects were found for antagonistic narcissism, with individuals from high scoring dyads perceiving lower appreciation and intimacy, and more conflict. Across all narcissism aspects, more conflicts were perceived in individuals from dyads scoring high on narcissism. This provides further evidence for the tolerance of narcissistic traits by individuals scoring high on these traits themselves as they are able to maintain friendships even though at a lower level of relationship quality.

Keywords: narcissism aspects, relationship quality, long-term friendships, tolerance hypothesis, conflict

Introduction

Narcissism can be characterized by a need for admiration, a lack of empathy, feelings of entitlement, the willingness to exploit others, callousness, and authoritativeness (for a review see Miller et al., 2017). These characteristics entail many problems for interpersonal relationships due to narcissistic individuals' focus on their own needs and the provision of relatively little support for others. Nevertheless, individuals with narcissistic personality features are often evaluated rather positively during initial encounters, and the detrimental consequences of narcissism only tend to emerge in the long run (Czarna et al., 2016; Leckelt et al., 2020; Paulhus, 1998). Despite these issues, many individuals scoring high on narcissism are clearly capable of maintaining long-lasting relationships (e.g., see Gore & Widiger, 2016). One possible explanation for why an individual may accept the difficulties that accompany having a relationship with a narcissistic person is to be at least somewhat narcissistic oneself (Doroszuk et al., 2019; Grosz et al., 2015; Hart & Adams, 2014; Maaß et al., 2018). Thus, it is possible that scoring similarly high on narcissism may foster the maintenance of a relationship. In line with this, it has been found that individuals with high levels of antagonistic traits do not necessarily like those traits in others, but they are more willing to tolerate them by disliking those traits less than individuals with lower scores on antagonistic traits (Lamkin et al., 2018; Miller, Sleep, et al., 2018; Sleep et al., 2017). This phenomenon can be subsumed as the tolerance hypothesis of maladaptive personality traits. We assumed that the tolerance of narcissistic traits helps to maintain a friendship but at the cost of lower relationship quality. Although the relationship may be easier to maintain if narcissistic behavior is accepted, the same behavior may lower the satisfaction with the friendship.

Although many studies have considered narcissism in the context of romantic relationships (e.g., Lavner et al., 2016; Sauls et al., 2019; Wurst et al., 2017; Zeigler-Hill et al., 2020), fewer studies have observed the connections that narcissism may have with experiences in long-term friendships (for exceptions see Maaß et al., 2016; Sauls & Zeigler-Hill, 2020). The current study considers narcissism in friendships, which lasted for at least two years. We hypothesized that dyads that have similarly high narcissism scores would perceive their friendship quality as lower compared to dyads with lower narcissism scores. We distinguished between three aspects of narcissism: *assertive* narcissism, *antagonistic* narcissism, and *neurotic* narcissism (Crowe et al., 2019; see also

Ackerman, Donnellan, & Wright, 2019; Back, 2018; Krizan & Herlache, 2018; Miller et al., 2017) because it has been shown that assertive narcissism is related to popularity at zero-acquaintance, whereas antagonistic narcissism seems to drive unpopularity over time (Leckelt et al., 2020; Leckelt et al., 2015). Thus, the relation of the different narcissism aspects to perceived friendship quality may vary. We believe this is the first study to address the relation of dyadic similarities in the level of assertive, antagonistic, and neurotic narcissism with perceived friendship quality (*appreciation*, *intimacy*, *conflict*, and *dominance*) as a further test of the tolerance hypothesis.

Narcissism Aspects

Across current models, three aspects of narcissism have been postulated (Ackerman et al., 2019; Back, 2018; Crowe et al., 2019; Krizan & Herlache, 2018) with different names but similar definitions. Assertive narcissism (Back, 2018; Crowe et al., 2019) – which is referred to as grandiosity in some models (Ackerman et al., 2019; Krizan & Herlache, 2018) – can be described by boldness, exhibitionism, striving for uniqueness, assertiveness, and a grandiose sense of self. Antagonistic narcissism (Back, 2018; Crowe et al., 2019), which has also been termed entitlement (Ackerman et al., 2019; Krizan & Herlache, 2018), can be characterized by arrogance, striving for supremacy, selfishness, callousness, devaluation of others, and willingness to exploit others for personal gain. Neurotic narcissism (Back, 2018; Crowe et al., 2019), or vulnerability (Ackerman et al., 2019; Krizan & Herlache, 2018), can be defined by distrust, vacillation in self-image, dependence on others for validation, reactive anger, anxiety, and proneness for frustration.

Overlap between the three aspects of narcissism has often been attributed to antagonistic narcissism, which is believed to serve as the link between assertive narcissism and neurotic narcissism. This assumption has also been supported empirically. Antagonistic narcissism was found to be positively related to assertive narcissism ($r = .50$) and to neurotic narcissism ($r = .39$), whereas the correlation between assertive narcissism and neurotic narcissism was somewhat lower ($r = .28$, Crowe et al., 2019; see also Grosz et al., 2017). As a consequence, antagonistic narcissism has been referred to as the core of narcissism (Krizan & Herlache, 2018).

Narcissism in Social Relationships

Most people do not want a friend with any of the narcissistic personality features described above (Grosz et al., 2015), with most of these characteristics being

particularly unappealing for long-term relationships. The contextual reinforcement model of narcissism (Campbell & Campbell, 2009) formalizes this idea: Although the benefits of narcissism may outweigh its costs in an emerging relationship, the costs of narcissism increase over time. According to the model, the shifts in the costs and benefits of narcissism during the course of a relationship apply to both a narcissistic individual who may receive less positive feedback, as well as the social partner who may be exposed to more conflict as the relationship continues (e.g., Wurst et al., 2017). This pattern may lead an individual scoring high on narcissism to try to cyclically return to the so-called emerging zone of friendships in order to profit from its benefits or cause the other individual to eventually end the relationship due to high costs (Campbell & Campbell, 2009).

The tendency for individuals scoring high on narcissism to be liked at the beginning of interactions was found mainly to be driven by assertive narcissism (Leckelt et al., 2020; Leckelt et al., 2015; Wurst et al., 2017). In their narcissistic admiration and rivalry concept (NARC), Back and colleagues (Back, 2018; Back et al., 2013) suggested that the assertive aspect of narcissism leads to social potency, which is based on the belief of a grandiose self, and goes along with charming, self-assured, and expressive behavior. Furthermore, the assertive narcissist is often perceived to be agentic by others which contributes to their positive perceptions (Back, 2018). However, this initial liking decreases over time due to the antagonistic aspect of narcissism (Leckelt et al., 2015; Wurst et al., 2017), which, according to the NARC, leads to social conflicts. Self-defense mechanisms, low need for intimacy, and hostile and aggressive behavior contribute to the individual scoring high on antagonistic narcissism being perceived as untrustworthy and evaluated less positively by others (Back, 2018). It is then likely that the emerging problems ultimately lead to relationship dissolution. Less attention has been paid to the neurotic aspect of narcissism with regard to social relationships. It has been assumed that individuals scoring high on neurotic narcissism are likely to have relationships that are conflict-prone and unstable due to their distrust of others, constant need for validation, and dismissive, volatile behavior (Dickinson & Pincus, 2003; Krizan & Herlache, 2018). Furthermore, individuals with high levels of neurotic narcissism reported less relationship satisfaction (Donnellan et al., 2021).

The positive correlations between the three aspects of narcissism (Back et al., 2013; Crowe et al., 2019) indicate that it is likely that the narcissistic individual who is liked at the beginning (due to assertive narcissism) is the same one who is disliked and may not be able to maintain a relationship later on (due to the antagonistic and neurotic aspects of narcissism). Despite the relationship problems that characterize narcissists, individuals with narcissistic personality features are often able to maintain long-lasting relationships (e.g., see Gore & Widiger, 2016; Maaß et al., 2016; Vazire et al., 2008). Thus, some kind of buffer may be needed when an individual scoring high on narcissism, despite detrimental behaviors, is able to maintain a relationship. It has been shown that narcissistic individuals are not only aware of their narcissistic behavior but also perceive their traits to be desirable and seem willing to tolerate them in others (Carlson et al., 2011; Hart & Adams, 2014). In the realm of the contextual reinforcement model, we propose that friendship dyads who are able to maintain their relationship, which we operationalized through a relationship duration of at least two years, perceive their friendship quality as less positive when they have similarly high narcissism scores compared to dyads with lower narcissism scores. The costs which arise due to narcissistic behavior may be reflected in lower friendship quality, but the relationship can be maintained as the behavior is tolerated, even though not particularly appreciated (see Lamkin et al., 2018).

The Tolerance Hypothesis

Hudson and Fraley (2014) suggested that complementarity in relationships may help to diversify strengths and compensate for weaknesses. For example, it has been found that dissimilarity in dominance predicts relationship satisfaction (Markey & Markey, 2007). However, we argue that with regard to narcissism, scoring similarly high on the different trait aspects fosters relationship maintenance as their own traits may be more easily accepted or tolerated (e.g., see also Lamkin et al., 2015; Maaß et al., 2018). Maaß et al. (2016) argued that individuals with narcissistic personality features might not directly invest in factors that facilitate relationship maintenance (e.g., support and self-disclosure; Fehr, 2012) but that scoring similarly high on narcissism may foster self-enhancement through in-group and out-group effects, which in turn benefit relationship maintenance. A highly narcissistic dyad may "build one unit (in-group) in which their socially disapproved sides are directed against the outside (out-group) and not each other" (Maaß et al., 2016, p. 378). Tolerance for narcissistic

personality features may also be beneficial because it may reduce the impact of behaviors such as selfishness or arrogance on the relationship (Campbell & Campbell, 2009; Paulhus, 1998).

Several studies have shown evidence in favor of such a tolerance hypothesis. For example, maladaptive personality traits were found to be tolerated but still undesirable by individuals scoring high on maladaptive personality traits (Lamkin et al., 2018; Miller, Sleep, et al., 2018). Similarly, maladaptive traits in potential romantic partners were found to be more tolerated by individuals scoring high on these traits themselves (Sleep et al., 2017). Individuals scoring high on assertive narcissism tended to like grandiosity ($M = 2.05$) and attention-seeking ($M = 2.43$) more than individuals scoring high on neurotic narcissism ($M = 1.56$ and $M = 2.00$, respectively; Lamkin et al., 2018). These results indicate that the differentiation of the narcissism aspects may be useful when testing the tolerance hypothesis.

Research on the Dark Triad revealed that individuals scoring high on assertive narcissism were more willing to date and marry a person who also scores high on assertive narcissism (Kay, 2021). This was not found for potential one-night stands, which led the author to conclude that the emphasis on similar traits in the partner may be greater in long-term relationships. Similarly, women scoring high on assertive narcissism rated faces of narcissistic males as desirable for long-term but not for short-term relationships (Lyons & Blanchard, 2016). However, it was previously shown that individuals who score high on narcissism rate other narcissistic individuals as more likable when an abstract trait description is given but not when a more concrete behavioral description is provided (Adams et al., 2015). This is somewhat contradictory to the finding that individuals scoring high on assertive narcissism were able to identify actors who showed narcissistic responses to interview questions and rated them as more similar to themselves, perceived their behavior as more positive, and liked them more (Burton et al., 2017). Across three studies, individuals scoring high on assertive narcissism rated assertive narcissistic target profiles more positive compared to low-scoring individuals (Wallace et al., 2015). The ratings of those scoring high on assertive narcissism were less affected by the targets' narcissism levels (high vs. low) compared to individuals scoring low. The effects could not be replicated within individuals scoring high on neurotic narcissism rating targets with high vs. low assertive narcissism.

In conclusion, previous research has mainly focused on potential relationships suggesting that, particularly in long-term relationships, narcissism tends to be tolerated by individuals who score also high on assertive narcissism. We extend these findings by observing actual relationships lasting for at least two years and by observing not only assertive narcissism but also antagonistic and neurotic narcissism. If our assumptions are correct, individuals scoring high on any of the narcissism aspects have long-lasting friendships but with lower relationship quality, which may just be less disturbing for them and potentially easier to maintain.

Friendship Quality Aspects

Four aspects of friendship quality were assessed: appreciation, intimacy, conflict, and dominance. We chose those aspects to evaluate potentially positive (appreciation and intimacy) as well as potentially detrimental aspects (conflict and dominance) of friendship quality.

Appreciation

Appreciation is an important quality of friendships, as it signals affirmation, approval, and respect through someone else (Furman & Buhrmester, 1985). Particularly for individuals scoring high on narcissism, being valued by others is important, as it may foster self-enhancement, which is crucial for individuals scoring high on assertive narcissism (see Back et al., 2013). Also, the validation through others, which is essential for individuals scoring high on neurotic narcissism (e.g., Crowe et al., 2019), may be satisfied if appreciation is perceived to be high. While the link between appreciation and the three narcissism aspects has not been observed directly, in a recent study, assertive narcissism was found to be unrelated, and antagonistic narcissism was found to be negatively related to perceived respect from the romantic partner (Vrabel et al., 2021). The time someone spends with a friend could also serve as an indicator of appreciation. Other than respect, spending time with a friend was positively associated with assertive narcissism but not antagonistic narcissism (Leckelt et al., 2019). In contrast to our general assumption that dyads with higher levels of narcissism would experience less satisfying relationships, the latter findings indicate that perceived appreciation may actually be *higher* in dyads with elevated levels of narcissism compared to dyads with lower levels of narcissism. For dyads high in antagonistic narcissism, we assumed perceived appreciation to be lower, and we had no specific assumption regarding neurotic narcissism.

Intimacy

Intimacy or self-disclosure has been found to be important for the maintenance of a friendship (Fehr, 2012; Oswald, 2017), as greater depth and breadth of self-disclosure can solidify a relationship and let it grow. However, for individuals scoring high on assertive narcissism, self-disclosure may be of less importance, and intimacy may even be avoided (Campbell, 1999) for the benefit of positive self-promotion (Maaß et al., 2016). The personal information which an individual scoring high on assertive narcissism shares is probably superficial and may hamper the development of actual intimacy (see Maaß et al., 2018). Striving for supremacy, a facet of antagonistic narcissism (Back et al., 2013), could impede self-disclosure in individuals scoring high on this trait, as probably no information where the individual appears weak or unsuccessful would be shared. The distrust which goes along with neurotic narcissism (e.g., Krizan & Herlache, 2018) may likewise prevent genuine intimacy. Overall, the narcissism aspects are likely to go along with rather low intimacy in long-term friendships. We assumed that dyads scoring high on the narcissism aspects would evaluate their friendships as less intimate than individuals in dyads with lower narcissism scores.

Conflict

Conflict, when frequently occurring, can be a reason for a friendship to deteriorate (Laursen & Adams, 2018) and is thus important to be considered in long-term relationships. When a friendship is characterized by many conflicts, effective conflict management is needed to avoid deterioration (Canary et al., 1995). Assertive narcissism was found to be related to revengeful behavior, antagonistic narcissism to revengeful and less problem-focused behavior (Back et al., 2013). Those revengeful behaviors may lead to conflict and poor conflict management, which can likewise be assumed for reactive anger found in individuals scoring high on neurotic narcissism (Krizan & Johar, 2015). In a study examining narcissism and conflict behaviors in romantic relationships, high dyadic assertive narcissism was found to be related to greater aggression (Keller et al., 2014). Based on the empirical evidence and theoretically likely relations, we assumed for all narcissism aspects that dyads who scored higher on narcissism would report more conflicts than those scoring lower.

Dominance

Dominance, representing the relative power in a friendship, could be interesting with regard to dyadic narcissism levels, as it is, for example, a behavior commonly shown by individuals scoring high on assertive narcissism (Leckelt et al., 2020; see also Miller et al., 2012). Similarly, in romantic relationships, it was found that perceived power was related to assertive narcissism but not antagonistic narcissism (Vrabel et al., 2020). In the interpersonal circumplex, neurotic narcissism was found to be either negatively (Miller et al., 2013) or unrelated (Miller et al., 2012) to dominance. We assumed dyads scoring high on assertive narcissism to perceive to be more dominated by their friends than those individuals of dyads scoring lower and had no assumptions with regard to the other two narcissism aspects.

The Present Study

The purpose of the present study was to provide further evidence in favor of the tolerance hypothesis of maladaptive personality traits (e.g., Kay, 2021; Lamkin et al., 2018) in long-lasting friendships. While previous evidence suggests several relations between the narcissism aspects and friendship quality, we assume that the perceived friendship quality in dyads scoring high on the three narcissism aspects is lower compared to dyads which score lower in the narcissism aspects. Even though narcissistic characteristics may be tolerated and the friendship is maintained, we assumed that the friendship quality suffers from narcissistic behavior and is lower in dyads with individuals scoring high on any of the narcissism aspects. We assumed that this effect would be most pronounced in antagonistic narcissism, which was shown to be most detrimental in long-term relationships (e.g., Leckelt et al., 2015). Thus, the present research was intended to shed light on the different aspects of narcissism and their potentially differential effects in terms of evaluations of friendship quality.

Method

Participants and Procedure

Social media platforms, flyers, and several email lists were used to recruit participants. Participants were asked to provide information about themselves and then send an email link for participation to a good, ideally their best friend, whom they should know for at least two years. Friends completed the same questionnaire as the initially recruited person. All participants received feedback about their personality

traits, and psychology students also received course credit. A total of 1,014 people finished the questionnaire, 431 participants recruited 431 friends to participate. Finally, data from $N = 830$ individuals participating in dyads could be used after participants who failed two or more manipulation checks or had implausible response patterns (e.g., selecting "1" as the response for every item) were removed. Participants were on average 26.24 ($SD = 8.03$) years old. The majority of the sample indicated to be female (79.5%) and attending university (64.7%). About half of the sample was in a romantic relationship (54.6%). The friendships lasted on average for 9.23 years ($SD = 7.11$), and most dyads indicated they were best friends (62.1%) or very close friends (26.2%). Data and codebook can be found on the OSF (https://osf.io/sg7b6/?view_only=928aafb4055144fe95a1da5de4f274cb).

Instruments

Narcissism. The Narcissistic Admiration and Rivalry Questionnaire (NARQ; Back et al., 2013) was used to assess *narcissistic admiration* (which represents the assertive aspect of narcissism) and *narcissistic rivalry* (which represents the antagonistic aspect of narcissism). Participants were asked to rate how well statements concerning narcissistic admiration (9 items; e.g., "I am great.") and narcissistic rivalry (9 items; e.g., "I often get annoyed when I am criticized.") described them using scales that ranged from 1 (*not agree at all*) to 6 (*agree completely*).

Neurotic narcissism was measured using the vulnerability items from the brief version of the Pathological Narcissism Inventory (B-PNI; Morf et al., 2016; Schoenleber et al., 2015). Participants were asked to rate how well statements concerning vulnerability (16 items; e.g., "It's hard to feel good about myself unless I know other people admire me.") described them using scales that ranged from 1 (*not at all like me*) to 6 (*very much like me*). In the following, we will refer to this construct as *narcissistic vulnerability* in order to avoid misinterpretations since only the vulnerability items from the B-PNI were used.

Friendship Quality. The Network of Relationships Inventory (NRI; Furman & Buhrmester, 1985) was used in the adapted version of the Panel Analysis of Intimate Relationships and Family Dynamics (pairfam; Walper et al., 2010). The NRI includes four aspects of friendship quality: *admiration* (e.g., "How much does your friend like or approve of the things you do?"), *intimacy* (e.g., "How often do you share secrets and private feelings with your friend?"), *conflict* (e.g., "How often are you and your friend

angry with or get mad at each other?"), and *dominance* (e.g., "How often does your friend assert him-/ herself, when you disagree?"). Each aspect was assessed with two items and rated on a scale ranging from 1 (*never*) to 5 (*always*).

Other measures. We also collected information concerning self-esteem, life events, Big Five personality, and perceptions of the behavior of the friend. None of those measures were addressed in the present research.

Statistical Analyses

All analyses were conducted using the software R (R Core Team, 2020). In a first step, participants were classified as scoring low, medium, or high on each of the three narcissism aspects. We used data by Grosz et al. (2017) as an independent reference group. We split the sample (N = 1,682) in female and male participants to account for gender effects usually found in the three narcissism aspects (e.g., Back et al., 2013; Wright et al., 2010). We used mean and standard deviation of the independent sample to categorize our participants as scoring 1 = low (equal or below 1 *SD* below mean), 2 = medium (within 1 SD below and above mean), and 3 = high (equal or above 1 *SD* above mean). Based on this classification, we grouped the participants according to their dyadic narcissism levels. Group 1 included all participants where both dyad members scored low, or one scored low and the other medium (1 and 1, 1 and 2). Group 2 included all participants where both dyad members were identified as medium narcissistic (2 and 2). Group 3 included those participants where both dyad members scored high, or one scored high and the other medium (3 and 3, 3 and 2). Finally, group 4 included those dyads where one scored high and the other low (1 and 3).

These groups were then used as the independent variable in analyses of variance (ANOVAs) predicting the friendship quality aspects. We first checked the ANOVA requirement of homoscedasticity using Levene's test and Brown-Forsythe test. We then calculated one-way ANOVAs with the dyadic narcissism group as the factor, and two-way ANOVAs with the dyadic narcissism group and gender as factors. To explore which groups in particular differed from each other, we used post-hoc tests in which we corrected for multiple testing with the Benjamini-Hochberg method. Finally, we estimated Cohen's d as a measure of the effect size, with d = 0.20 indicating a small, d = 0.50 a medium, and d = 0.80 a large effect (Cohen, 1988).

Results

Descriptive Statistics

Descriptive statistics can be found in Table 1. Reliability estimates of the narcissism aspect scores were satisfactory such that Cronbach's alphas were .85, .80, and .86, and McDonald's omegas .86, .84, and .87 for assertive, antagonistic, and neurotic narcissism, respectively. Given that the friendship quality aspects were assessed with only two items we calculated interitem correlations as an indicator of reliability: Appreciation r = .54, intimacy r = .55, conflict r = .61, and dominance r = .25. Correlations between all constructs are shown in Table 1. The correlations between the narcissism aspects were comparable to those found in the literature, with the lowest relation between narcissistic admiration and narcissistic vulnerability and similarly high relations of narcissistic rivalry with the other two aspects (e.g., Crowe et al., 2019; Grosz et al., 2017). The narcissism aspects tended to have the highest relation to conflict (r = .12 to .18) and the lowest to dominance (r = .01 to .10). Within the friendship quality aspects, the strongest association was found between appreciation and intimacy (r = .45), and the weakest association was found between intimacy and dominance (r = .05).

ANOVAs and Post-Hoc Tests

Homogeneity of variance was found for all combinations of narcissism and friendship quality aspects except for narcissistic admiration and appreciation. Both the Levene's test (F = 4.64, p = .032) and Browne-Forsythe test (F = 4.80, p = .029) were significant. We applied the more robust Welch's ANOVA, which did not change the results significantly. In most one-way ANOVAs, the group factor was significant (see Tables S1 to S4 in the supplement for detailed results). In the two-way ANOVAs, the interaction between narcissism and gender was never significant, which is why we focused on the post-hoc tests for the one-way ANOVAs. The results of the post-hoc tests are shown in Table 2 (intimacy), Table 3 (appreciation), Table 4 (conflict), and Table 5 (dominance) and are depicted accordingly in Figures 1 to 4. Exact group sizes can be found in the table notes. The clearest picture emerged for perceived conflict. Across narcissism aspects, the groups with low and medium dyadic narcissism levels (1 and 2) differed substantially from the group with the highest narcissism levels (3). This was also the case for the dyadic narcissistic rivalry predicting appreciation and intimacy. As expected, dyads with higher levels of narcissism perceived more conflict as well as less appreciation and intimacy. For perceived dominance, only the group

with the lowest dyadic narcissistic vulnerability (1) differed from the group with the highest (3), with those individuals of dyads with higher narcissistic vulnerability perceiving more dominance. The only substantial difference between a group and the group with mixed dyadic narcissism levels (4) was found with the group of high dyadic admiration (3) predicting perceived intimacy with lower intimacy in the mixed group. Significant effects sizes ranged from d = 0.27 to 0.66 with an average of d = 0.37 (see Tables 2 to 5) and can therefore be considered to be small to medium in size.

Discussion

It was the aim of the current study to observe the relationship quality in dyads of long-term friends, testing whether evaluations of the perceived friendship quality differ depending on the narcissism level of both friends. We assumed that narcissistic behavior would be tolerated by individuals who score high on narcissism themselves (tolerance hypothesis), which is reflected in maintained relationships but at the cost of lower relationship quality. Three aspects of narcissism (assertive narcissism, antagonistic narcissism, and neurotic narcissism) were compared, and their relation to four indicators of friendship quality was examined (i.e., appreciation, intimacy, conflict, and dominance). Most effects in the expected direction were found for antagonistic narcissism (measured by narcissistic rivalry scores): The friendship quality was lower (lower appreciation, lower intimacy, and higher conflict) in dyads in which both individuals scored high on antagonistic narcissism compared to dyads where both individuals scored lower. Within dyads where both individuals scored high on assertive (measured by narcissistic admiration scores) or neurotic narcissism (measured by narcissistic vulnerability scores), this pattern only emerged for conflict. The pattern was consistent with our assumption that effects would be most pronounced in dyads scoring high on antagonistic narcissism as this was the aspect, which was found to have the most negative impact in long-term relationships in previous research (e.g., Wurst et al., 2017). Further, these results provide additional support for the importance of distinguishing between the assertive, antagonistic, and neurotic aspects of narcissism. Distinguishing between these aspects allowed for a more nuanced understanding of the connections between dyadic narcissism levels and the perception of friendship quality. One possible explanation for why fewer effects were found for assertive narcissism may be the more effective emotion regulation that goes along with higher scores of narcissistic admiration (Cheshure et al., 2020), which

may generally lead to fewer interactional problems (English et al., 2013). In turn, antagonistic narcissism (i.e., narcissistic rivalry) is related to emotion dysregulation (Cheshure et al., 2020), which is likely to lead to interpersonal conflicts. These findings underline the idea of the tolerance hypothesis, which may be particularly pronounced for the more detrimental antagonistic aspect of narcissism.

Evidence for the Tolerance Hypothesis

The tolerance hypothesis of maladaptive personality traits postulates that scoring high on a maladaptive trait such as narcissism leads individuals to accept the behaviors that go along with their own trait, more in others than individuals scoring low on this trait. This is particularly interesting with regard to long-term relationships because being friends with someone who scores high on narcissism and may exploit their friends in order to reinforce their own self-worth (Morf & Rhodewalt, 2001) is rather unattractive (see also Grosz et al., 2015). We, therefore, assumed that this tolerance of the own traits in others would be reflected in maintained relationships but at the cost of lower perceived friendship quality in dyads of friends in which both individuals score high on narcissism. While previous research mostly observed the potential willingness to engage with someone who scores high on maladaptive traits (e.g., Kay, 2021; Lamkin et al., 2018), we observed individuals in friendship dyads lasting for at least two years attempting to transfer previous findings to existing friendships. This also addresses the finding that tolerance was found to be higher in potential long-term compared to potential short-term relationships (Kay, 2021; Lyons & Blanchard, 2016). In sum, our results can be interpreted in favor of the tolerance hypothesis, with individuals from dyads scoring high on the narcissism aspects tending to perceive their friendship quality as lower than individuals from dyads with lower narcissism but still being (best) friends with the other.

The Role of the Friendship Quality Aspects
Conflict

Of our assumptions, only those regarding conflict, that individuals in dyads scoring high on the narcissism aspects would perceive more conflicts than those individuals from dyads scoring lower, were fully supported. This underlines the results by Keller et al. (2014), which was the only study we are aware of which specifically observed dyadic effects of narcissism and found high dyadic assertive narcissism to be related to aggression in romantic relationships. Meta-analytic results showed no

difference between the three narcissism aspects in their relation to aggression (Kjaervik & Bushman, 2021), which suggests that this could be similar in the dyadic context. Aggression may be a precursor, behavior during, or successor of conflict, yet conflict as a construct is broader and also covers aspects such as revengeful behavior, which has been found to be related to assertive and antagonistic narcissism (Back et al., 2013). Taken together, our results extend previous findings by showing that in long-term friendships, high dyadic levels of all three narcissism aspects go along with more perceived conflicts compared to dyads with lower narcissism levels.

Intimacy

We also assumed across all narcissism aspects that intimacy would be perceived to be lower in individuals from dyads with high narcissism levels compared to individuals from dyads with lower narcissism levels. However, only those individuals from dyads scoring high on antagonistic narcissism perceived lower intimacy. For assertive narcissism, the trend was even opposed to what we expected. Individuals in dyads scoring high on assertive narcissism tended to perceive more intimacy ($M = 4.17$) than individuals from dyads with low assertive narcissism levels ($M = 3.89$, see Table 3). This trend is not significant, but if one would follow it, a potential explanation could be a glorification of the friendship which then could support the self-promotion ("I am someone who has great friendships.") desired by individuals scoring high on assertive narcissism. Overall, we only found an effect of the dyadic narcissism level on perceived intimacy for the antagonistic aspect. This is in line with our more general prediction that the tolerance of narcissism in the friend may be more important for the antagonistic aspect, which was shown in previous research to be most detrimental in the long-term (e.g., Leckelt et al., 2015; Wurst et al., 2017).

Appreciation

For appreciation, we expected lower friendship quality for individuals in dyads with higher antagonistic levels, which was supported by the data. For assertive narcissism, a similar but less pronounced trend as for intimacy appeared, such that individuals from dyads with high assertive narcissism tended to perceive more appreciation ($M = 4.08$) than those from dyads scoring low ($M = 3.89$; see Table 2). An explanation for this non-significant trend could be similar to what we assumed for intimacy, such that the glorification of the relationship could be a booster for the individual's urge to self-promote. The trend is also in line with the finding that

assertive narcissism is related to spending time with a friend (Leckelt et al., 2019), which may allow higher intimacy. We had no assumption for neurotic narcissism, yet a difference between the group of medium and high dyadic narcissism levels emerged. A similar but not significant mean difference was found between the groups of low and high dyadic narcissism. In sum, we found individuals from dyads with high antagonistic narcissism to perceive lower appreciation than individuals from dyads scoring lower, which again suggests that tolerance of the own traits in the friend is important in antagonistic narcissism. The results for neurotic narcissism are not as clear but pointed in a similar direction, while the trend for assertive narcissism pointed in the opposed direction.

Dominance

With regard to dominance, we expected to find lower perceived friendship quality in dyads where both individuals scored high on assertive narcissism, which was not supported by the data. Instead, the individuals from dyads scoring high on neurotic narcissism differed from those scoring low, with those from the former group perceiving more dominance. This difference was smaller and therefore not significant for the individuals from dyads scoring high compared to those scoring medium on vulnerable neurotic narcissism. More generally, these findings are also reflected in the construct correlations, which were not significant for assertive narcissism ($r = .01$) and antagonistic narcissism ($r = .02$), and small for neurotic narcissism ($r = .10$, $p <.01$; see Table 1). In sum, the only potentially relevant effect of dyadic narcissism on perceived dominance was found for the neurotic aspect, which we did not expect due to previous results that were inconsistent (e.g., Miller et al., 2013; Miller et al., 2012).

Differential Effects

Overall, our results showed differential effects depending on the aspect of friendship quality. Next to antagonistic narcissism, most effects tended to appear for neurotic narcissism. Particularly for these two narcissism aspects, the results can be interpreted as evidence that in long-term friendships, higher dyadic narcissism levels go along with lower friendship quality, which seems to be tolerated as the friendship is maintained.

Limitations and Future Directions

In this study, effects of actual narcissism levels within dyads of friends were observed. Beyond that, it would be interesting to look at perceived similarities in the

narcissism aspects. For example, in their meta-analysis, Montoya et al. (2008) found perceived similarity to be more important than actual similarity in lasting relationships. However, we assumed that with regard to narcissism, the actual narcissism levels would play a key role in preventing relationship dissolution, given the detrimental effects of (antagonistic) narcissism on relationships. Nevertheless, it would be interesting to examine the effects of perceived levels of narcissism within friendships, which to our knowledge has not yet been done.

The overrepresentation of female participants resulted in mainly female-female friendships (n_{female} = 283, n_{male} = 29, n_{mixed} = 96). In same-gender friendships, women tend to engage more in casual affection than men (Hays, 1985), and they report more self-disclosure, closeness, and intimacy (Hall, 2011). A similar gender difference in expected closeness has also been found in mixed-gender friendships (Fuhrman et al., 2009). These previous findings suggest that female-female, male-male, and mixed-gender friendships work differently. However, we found no interaction effects of narcissism and gender in the two-way ANOVAs.

Due to the small sizes of the fourth group, which included dyads with individuals of mixed levels of narcissism (one individual scoring high, the other low), potential differences from this group may not have been detected. For assertive and antagonistic narcissism, the sample size in the fourth group was below the recommended sample size of 25 for each cell in an ANOVA (Schmider et al., 2010). We found only one substantial difference between group 4 and another group, which was the group of dyads scoring high on assertive narcissism having higher scores for intimacy. The small sample sizes of group 4 also led to comparatively large standard errors (see Figures 1 to 4). Moreover, our design was quasi-experimental, meaning the assignment to the groups was not random but dependent on the constellation of the narcissism scores in each dyad. Within the ANOVAs, we could not control for this nesting of the data.

In this study, only cross-sectional data were analyzed. For future research, it would be interesting to observe the perceived friendship quality in dyads high on narcissism aspects longitudinally. In particular, it would be insightful to assess friendship quality with an experience sampling. For example, it could be assessed whether more conflicts and worse conflict management occurs in dyads scoring high

on the narcissism aspects and whether this leads to more fluctuations in perceived friendship quality.

Conclusion

Friendship quality tends to be lower in individuals from dyads of friends who score high on narcissism compared to individuals from dyads with lower narcissism levels. This effect was particularly pronounced for the antagonistic aspect of narcissism and to a somewhat lesser extent for the assertive and the neurotic aspects of narcissism. Overall, we hope that this study may serve as a starting point for further exploration of the effects of narcissism on friendship quality in future research.

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Acknowledgement
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References
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References were integrated with the references of the synopsis and the other manuscript and are jointly presented at the end of this dissertation.

Table 1

Means, Standard Deviations, and Correlations With Confidence Intervals.

Variable	*M*	*SD*	1	2	3	4	5	6
1. Admiration	3.03	0.89						
2. Rivalry	2.04	0.74	.36**					
			[.30, .42]					
3. Vulnerability	2.80	0.81	.08*	.44**				
			[.01, .15]	[.38, .49]				
4. Appreciation	4.02	0.75	.07	-.09*	-.10**			
			[-.00, .13]	[-.16, -]	[-.17, -.03]			
5. Intimacy	4.09	0.78	.10**	-.14**	-.08*	.45**		
			[.03, .16]	[-.21, -.07]	[-.15, -.01]	[.39, .50]		
6. Conflict	1.97	0.71	.12**	.13**	.18**	-.23**	-.08*	
			[.05, .18]	[.07, .20]	[.11, .24]	[-.30, -.17]	[-.15, -.01]	
7. Dominance	2.78	0.69	.01	.02	.10**	-.11**	-.05	.28**
			[-.06, .08]	[-.05, .09]	[.03, .17]	[-.18, -.05]	[-.12, .02]	[.22, .35]

Note. M = mean, *SD* = standard deviation; Values in square brackets indicate the 95% confidence interval.

* indicates *p* < .05, ** indicates *p* < .01

Table 2

Post Hoc Comparisons Between Groups of Differing Narcissism Levels in Perceived Appreciation

Contrast	Mean Group 1	Mean Group 2	Mean Difference	SE	df	t	p	Cohen's d	p
				Admiration					
1 - 2	3.98	4.00	-0.02	0.07	812	-0.21	.835	0.02	.84
1 - 3	3.98	4.08	-0.10	0.08	812	-1.29	.651	0.13	.20
1 - 4	3.98	3.79	0.19	0.19	812	0.98	.651	0.25	.33
2 - 3	4.00	4.08	-0.08	0.06	812	-1.43	.651	0.11	.15
2 - 4	4.00	3.79	0.20	0.18	812	1.10	.651	0.27	.27
3 - 4	4.08	3.79	0.29	0.19	812	1.55	.651	0.38	.12
				Rivalry					
1 - 2	4.06	4.05	0.01	0.06	812	0.17	.868	0.01	.87
1 - 3	4.06	3.83	0.23	0.08	812	**2.91**	**.018**	**0.32**	**<.001**
1 - 4	4.06	4.21	-0.15	0.20	812	-0.74	.868	0.20	.46
2 - 3	4.05	3.83	0.22	0.07	812	**3.14**	**.011**	**0.30**	**<.001**
2 - 4	4.05	4.21	-0.16	0.20	812	-0.80	.868	0.22	.42
3 - 4	3.83	4.21	-0.38	0.21	812	-1.86	.255	0.52	.07
				Vulnerability					
1 - 2	4.05	4.08	-0.03	0.07	812	-0.35	.725	0.03	.72
1 - 3	4.05	3.87	0.18	0.08	812	2.30	.190	0.25	.02
1 - 4	4.05	4.17	-0.12	0.15	812	-0.78	.725	0.16	.44
2 - 3	4.08	3.87	0.21	0.06	812	**3.40**	**.004**	**0.28**	**<.001**
2 - 4	4.08	4.17	-0.09	0.14	812	-0.65	.725	0.12	.51
3 - 4	3.87	4.17	-0.30	0.14	812	-2.09	.146	0.41	.04

Note. Bolded font represents significant differences between groups. The *p*-values of the *t*-tests were corrected for multiple testing with the Benjamini-Hochberg method, *p*-values of Cohen's *d* are uncorrected. Group sizes were as follows: admiration $n_1 = 140$, $n_2 = 370$, $n_3 = 292$, $n_4 = 18$; rivalry $n_1 = 214$, $n_2 = 450$, $n_3 = 142$, $n_4 = 14$; vulnerability $n_1 = 140$, $n_2 = 438$, $n_3 = 212$, $n_4 = 30$.

Table 3

Post Hoc Comparisons Between Groups of Differing Narcissism Levels in Perceived Intimacy

Contrast	Mean Group 1	Mean Group 2	Mean Difference	SE	df	t	p	Cohen's d	p
Admiration									
1 - 2	3.98	4.11	-0.13	0.08	812	-1.65	.199	0.16	.10
1 - 3	3.98	4.17	-0.19	0.08	812	-2.39	.069	0.25	.02
1 - 4	3.98	3.65	0.33	0.20	812	1.66	.199	0.42	.10
2 - 3	4.11	4.17	-0.06	0.06	812	-1.05	.293	0.08	.29
2 - 4	4.11	3.65	0.46	0.19	812	2.39	.069	0.58	.02
3 - 4	4.17	3.65	0.52	0.19	812	**2.71**	**.042**	**0.66**	**.01**
Rivalry									
1 - 2	4.23	4.10	0.13	0.06	812	2.09	.148	0.17	.04
1 - 3	4.23	3.89	0.34	0.08	812	**4.10**	**<.001**	**0.44**	**<.001**
1 - 4	4.23	4.07	0.16	0.21	812	0.76	.894	0.21	.45
2 - 3	4.10	3.89	0.21	0.07	812	**2.81**	**.026**	**0.27**	**.01**
2 - 4	4.10	4.07	0.03	0.21	812	0.13	.895	0.04	.89
3 - 4	3.89	4.07	-0.18	0.22	812	-0.84	.894	0.23	.04
Vulnerability									
1 - 2	4.07	4.15	0.08	0.08	812	-1.02	.976	0.10	.31
1 - 3	4.07	4.15	0.06	0.08	812	0.69	.976	0.08	.49
1 - 4	4.07	4.15	-0.08	0.16	812	-0.52	.976	0.10	.60
2 - 3	4.15	4.15	0.14	0.07	812	2.09	.222	0.17	.04
2 - 4	4.15	4.15	0.00	0.15	812	-0.03	.976	0.01	.98
3 - 4	4.15	4.15	-0.14	0.15	812	-0.93	.976	0.18	.36

Note. Bolded font represents significant differences between groups. The *p*-values of the *t*-tests were corrected for multiple testing with the Benjamini-Hochberg method, *p*-values of Cohen's *d* are uncorrected. Group sizes were as follows: admiration $n_1 = 140$, $n_2 = 370$, $n_3 = 292$, $n_4 = 18$; rivalry $n_1 = 214$, $n_2 = 450$, $n_3 = 142$, $n_4 = 14$; vulnerability $n_1 = 140$, $n_2 = 438$, $n_3 = 212$, $n_4 = 30$.

Table 4

Post Hoc Comparisons Between Groups of Differing Narcissism Levels in Perceived Conflict

Contrast	Mean Group 1	Mean Group 2	Mean Difference	SE	df	t	p	Cohen's d	p
				Admiration					
1 - 2	1.88	1.90	-0.02	0.07	812	-0.29	.770	0.03	.77
1 - 3	1.88	2.10	-0.22	0.07	812	**-2.97**	**.015**	**0.31**	**<.001**
1 - 4	1.88	2.03	-0.15	0.18	812	-0.82	.770	0.21	.41
2 - 3	1.90	2.10	-0.20	0.06	812	**-3.55**	**.002**	**0.28**	**<.001**
2 - 4	1.90	2.03	-0.13	0.18	812	-0.73	.770	0.18	.46
3 - 4	2.10	2.03	0.07	0.18	812	0.39	.770	0.09	.70
				Rivalry					
1 - 2	1.85	1.96	-0.11	0.06	812	-1.81	.281	0.15	.07
1 - 3	1.85	2.18	-0.34	0.08	812	**-4.38**	**<.001**	**0.47**	**<.001**
1 - 4	1.85	2.14	-0.29	0.19	812	-1.51	.394	0.42	.13
2 - 3	1.96	2.18	-0.23	0.07	812	**-3.37**	**.004**	**0.32**	**<.001**
2 - 4	1.96	2.14	-0.19	0.19	812	-0.98	.655	0.27	.33
3 - 4	2.18	2.14	0.04	0.20	812	0.21	.833	0.06	.83
				Vulnerability					
1 - 2	1.83	1.91	-0.08	0.07	812	-1.21	.439	0.12	.23
1 - 3	1.83	2.17	-0.34	0.08	812	**-4.46**	**<.001**	**0.49**	**<.001**
1 - 4	1.83	2.02	-0.19	0.14	812	-1.31	.439	0.26	.19
2 - 3	1.91	2.17	-0.26	0.06	812	**-4.40**	**<.001**	**0.37**	**<.001**
2 - 4	1.91	2.02	-0.10	0.13	812	-0.77	.439	0.15	.44
3 - 4	2.17	2.02	0.16	0.14	812	1.14	.439	0.22	.26

Note. Bolded font represents significant differences between groups. The *p*-values of the *t*-tests were corrected for multiple testing with the Benjamini-Hochberg method, *p*-values of Cohen's *d* are uncorrected. Group sizes were as follows: admiration $n_1 = 140$, $n_2 = 370$, $n_3 = 292$, $n_4 = 18$; rivalry $n_1 = 214$, $n_2 = 450$, $n_3 = 142$, $n_4 = 14$; vulnerability $n_1 = 140$, $n_2 = 438$, $n_3 = 212$, $n_4 = 30$.

Table 5

Post Hoc Comparisons Between Groups of Differing Narcissism Levels in Perceived Dominance

Contrast	Mean Group 1	Mean Group 2	Mean Difference	*SE*	*df*	*t*	*p*	Cohen's *d*	*p*
				Admiration					
1 - 2	2.72	2.81	-0.09	0.07	812	-1.23	.726	0.12	.22
1 - 3	2.72	2.79	-0.07	0.07	812	-0.93	.726	0.10	.35
1 - 4	2.72	2.56	0.16	0.18	812	0.91	.726	0.23	.36
2 - 3	2.81	2.79	0.02	0.05	812	0.34	.733	0.03	.73
2 - 4	2.81	2.56	0.25	0.17	812	1.44	.726	0.35	.15
3 - 4	2.79	2.56	0.23	0.17	812	1.32	.726	0.32	.19
				Rivalry					
1 - 2	2.67	2.81	-0.14	0.06	812	-2.37	.090	0.20	.02
1 - 3	2.67	2.85	-0.18	0.08	812	-2.41	.090	0.26	.02
1 - 4	2.67	2.89	-0.22	0.19	812	-1.17	.829	0.32	.24
2 - 3	2.81	2.85	-0.04	0.07	812	-0.67	.829	0.06	.50
2 - 4	2.81	2.89	-0.09	0.19	812	-0.46	.829	0.13	.64
3 - 4	2.85	2.89	-0.04	0.19	812	-0.22	.829	0.06	.83
				Vulnerability					
1 - 2	2.69	2.74	-0.05	0.07	812	-0.82	.414	0.08	.41
1 - 3	2.69	2.89	-0.20	0.08	812	**-2.68**	**.046**	**0.29**	**.01**
1 - 4	2.69	3.00	-0.31	0.14	812	-2.25	.098	0.45	.03
2 - 3	2.74	2.89	-0.15	0.06	812	-2.54	.057	0.21	.01
2 - 4	2.74	3.00	-0.26	0.13	812	-1.98	.143	0.37	.05
3 - 4	2.89	3.00	-0.11	0.13	812	-0.83	.414	0.16	.41

Note. Bolded font represents significant differences between groups. The *p*-values of the *t*-tests were corrected for multiple testing with the Benjamini-Hochberg method, *p*-values of Cohen's *d* are uncorrected. Group sizes were as follows: admiration $n_1 = 140$, $n_2 = 370$, $n_3 = 292$, $n_4 = 18$; rivalry $n_1 = 214$, $n_2 = 450$, $n_3 = 142$, $n_4 = 14$; vulnerability $n_1 = 140$, $n_2 = 438$, $n_3 = 212$, $n_4 = 30$.
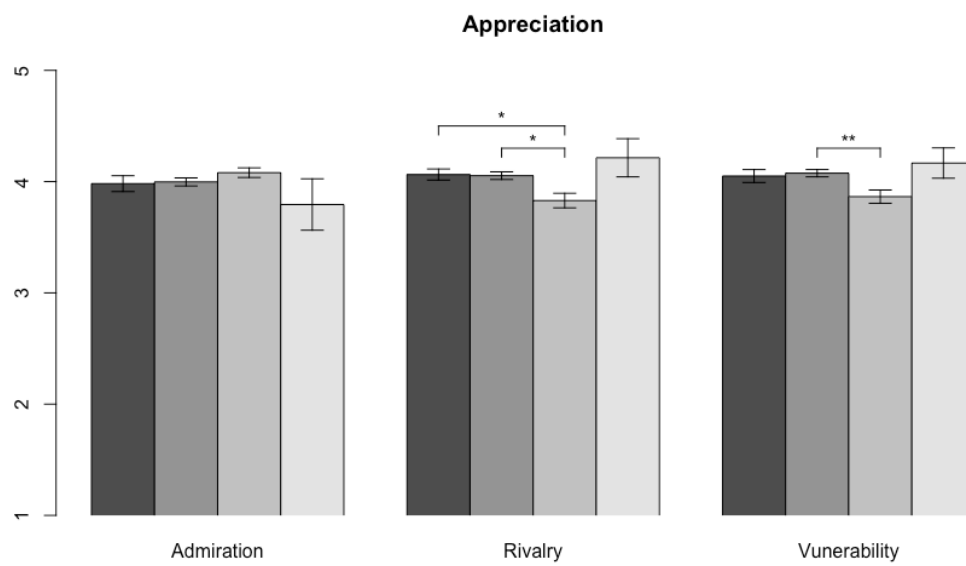
Figure 1

Differences in Perceived Appreciation Grouped According to Dyadic Narcissism Levels

Appreciation

Figure 2

Differences in Perceived Intimacy Grouped According to Dyadic Narcissism Levels
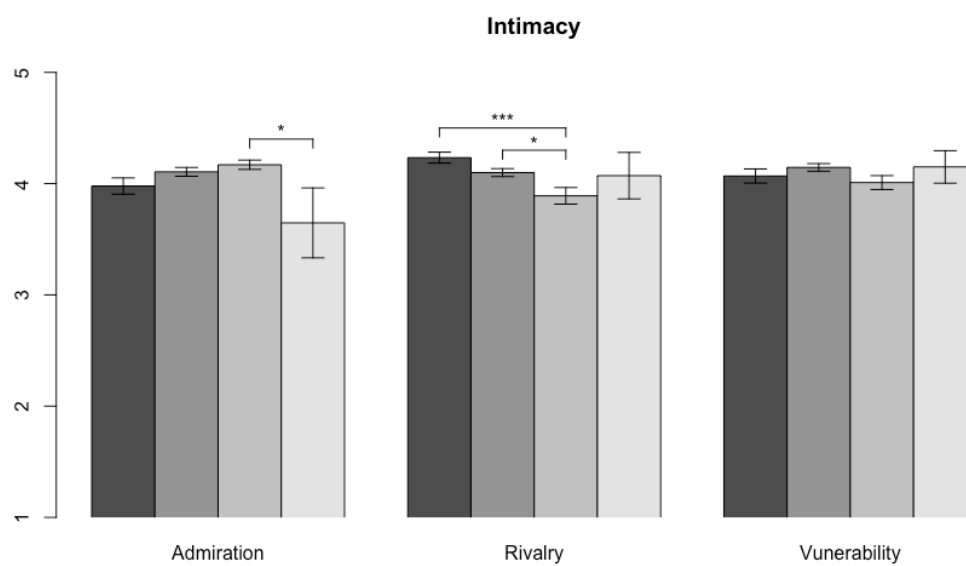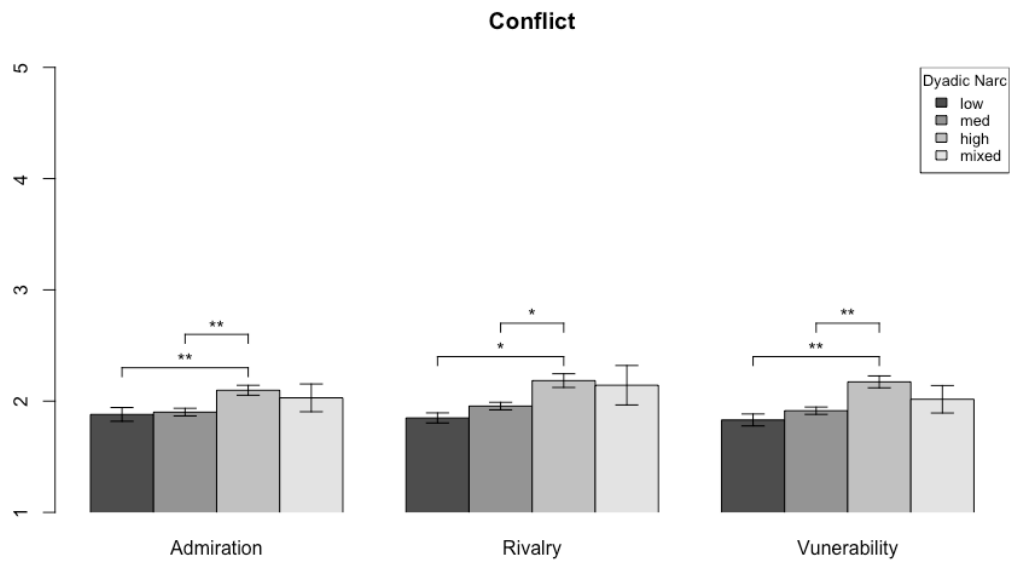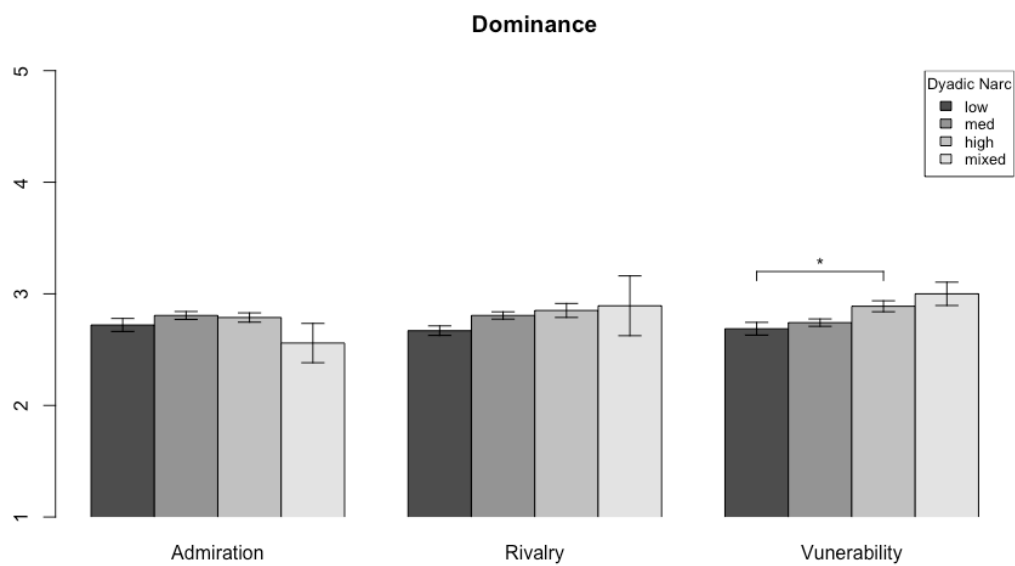

Intimacy

Figure 3

Differences in Perceived Conflict Grouped According to Dyadic Narcissism Levels

Figure 4

Differences in Perceived Dominance Grouped According to Dyadic Narcissism Levels

Supplemental Material

Table S1

One-way ANOVAs With Perceived Appreciation as Criterion

Predictor	Sum of Squares	df	Mean Square	F	p	partial η^2	partial η^2 90% CI
			Admiration				
(Intercept)	3480.97	1	3480.97	6315.04	<.001		
Dyadic N	2.33	3	0.78	1.41	.239	.01	[.00, .01]
Error	447.59	812	0.55				
			Rivalry				
(Intercept)	3056.04	1	3056.04	5596.80	<.001		
Dyadic N	6.54	3	2.18	3.99	.008	.01	[.00, .03]
Error	443.38	812	0.55				
			Vulnerability				
(Intercept)	5489.21	1	5489.21	10067.92	<.001		
Dyadic N	7.20	3	2.40	4.40	.004	.02	[.00, .03]
Error	442.72	812	0.55				

Note. N = Narcissism

Table S2

One-way ANOVAs With Perceived Intimacy as Criterion

Predictor	Sum of Squares	df	Mean Square	F	p	partial η^2	partial η^2 90% CI
Admiration							
(Intercept)	3501.53	1	3501.53	5843.64	<.001		
Dyadic N	6.95	3	2.32	3.87	.009	.01	[.00, .03]
Error	486.55	812	0.60				
Rivalry							
(Intercept)	3106.51	1	3106.51	5217.07	<.001		
Dyadic N	10.00	3	3.33	5.60	.001	.02	[.01, .04]
Error	483.51	812	0.60				
Vulnerability							
(Intercept)	5636.83	1	5636.83	9328.50	<.001		
Dyadic N	2.85	3	0.95	1.57	.195	.01	[.00, .01]
Error	490.66	812	0.60				

Note. N = Narcissism

Table S3

One-way ANOVAs With Perceived Conflict as Criterion

Predictor	Sum of Squares	df	Mean Square	F	p	partial η^2	partial η^2 90% CI
Admiration							
(Intercept)	866.22	1	866.22	1734.06	<.001		
Dyadic N	7.67	3	2.56	5.12	.002	.02	[.00, .03]
Error	405.62	812	0.50				
Rivalry							
(Intercept)	773.72	1	773.72	1558.18	<.001		
Dyadic N	10.10	3	3.37	6.78	<.001	.02	[.01, .04]
Error	403.20	812	0.50				
Vulnerability							
(Intercept)	1323.74	1	1323.74	2683.97	<.001		
Dyadic N	12.81	3	4.27	8.66	<.001	.03	[.01, .05]
Error	400.48	812	0.49				

Note. N = Narcissism

Table S4

One-way ANOVAs With Perceived Dominance as Criterion

Predictor	Sum of Squares	df	Mean Square	F	p	partial η^2	partial η^2 90% CI
			Admiration				
(Intercept)	1637.55	1	1637.55	3407.87	<.001		
Dyadic N	1.58	3	0.53	1.10	.349	.00	[.00, .01]
Error	390.18	812	0.48				
			Rivalry				
(Intercept)	1472.97	1	1472.97	3082.69	<.001		
Dyadic N	3.77	3	1.26	2.63	.049	.01	[.00, .02]
Error	387.99	812	0.48				
			Vulnerability				
(Intercept)	2693.18	1	2693.18	5665.58	<.001		
Dyadic N	5.77	3	1.92	4.05	.007	.01	[.00, .03]
Error	385.99	812	0.48				

Note. N = Narcissism

3.   Part 3: Taking the Longitudinal Perspective

3.1.   Summary of Study 2

Narcissism and Friendship Quality: A Longitudinal Approach of Long-Term Friendships

Friendships have been defined as social relationships which are perceived as positive and pleasant, and which are based on reciprocity (Wrzus et al., 2017). While friendship variables like contact frequency and mutual liking are important during the formation of friendships, other variables such as intimacy and support gain importance for the friendship's maintenance (e.g., Fehr, 2012). Taking these components into account when looking at the behaviors shown by individuals scoring high on narcissism, it becomes apparent that charming and entertaining behaviors (agentic narcissism) are likely to be helpful, whereas selfish and hostile behaviors (antagonistic narcissism; Back et al., 2013) are rather obstructive for the maintenance of a friendship. In particular, having a friend with a high score on antagonistic narcissism seems not very appealing, and friendship quality is likely perceived to be rather low. But how do individuals who have a high narcissism score perceive the quality of their long-term friendships?

To answer this question, we observed agentic and antagonistic narcissism as well as four indicators of friendship quality (appreciation, intimacy, conflict, and dominance) at four time points over the period of one year. The same data as in Study 1 were used: At the initial time point, data were used from N = 831 individuals. The following three time points were each three months apart, with more than half of the participants participating in all four waves. To assess the reciprocal assertions between narcissism and friendship quality from one wave to another (i.e., as within-person deviations from one wave to the following wave), we used random intercepts cross-lagged panel models (RI-CLPM; Hamaker et al., 2015). In these models, a significant cross-lagged effect in favor of our assumptions would indicate that individuals which score higher on narcissism than they usually do experience a subsequent decrease in friendship quality.

We found evidence for cross-lagged effects between both narcissism aspects and appreciation: Individuals who scored lower than usual on agentic or antagonistic narcissism subsequently reported higher perceived appreciation, and those who perceived lower appreciation than usual experienced an increase in antagonistic

narcissism. Regarding the other friendship quality indicators, no additional statistically significant cross-lagged effects were found.

At the within-person level, the only effect of narcissism on subsequent perceived friendship quality was found for appreciation. Our results indicate that when people do not feel appreciated and valued, this affects antagonistic narcissism, which in turn appears to decrease their perception of appreciation. This is in line with the narcissistic admiration and rivalry concept (NARC; Back et al., 2013), which suggests that antagonistic self-protection, i.e., the motivation underlying antagonistic narcissism, is affected by social interaction outcomes through ego threat, which may here be triggered by less appreciation. Contrary to previous views that perceiving more appreciation than usual could lead to an ego-boost, promoting agentic self-enhancement and ultimately leading to higher admiration, we found no such relation. In summary, our research can serve as a starting point to observe the narcissism-relationship quality link. For example, it could be integrated into the TESSERA framework (Wrzus & Roberts, 2017) by using event-based assessments. Main limitations might be the rather short instruments (two to three items per construct), which were used to reduce participant burden, and as in Study 1, the overrepresentation of participants who identified as female.

3.2.   Study 2

<div align="center">

Narcissism and Friendship Quality:

A Longitudinal Approach to Long-Term Friendships

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Abstract

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Narcissistic admiration and rivalry have been studied in various social relationship contexts showing that the former is related to initial popularity while the latter tends to cause problems in the longer term. In particular the social partners of individuals with high narcissism tend to have higher costs and fewer benefits. But how does narcissism affect the perception of a long-term friendship? To gain insight into the perception of friendship quality in dependence of narcissism $N_{T1} = 831$ individuals reported on their narcissism and relationship quality with a close friend at four measurement occasions ($N_{T2} = 619$, $N_{T3} = 484$, $N_{T4} = 420$). We analyzed bivariate relations and random intercepts cross-lagged panel models (RI-CLPM) of narcissistic admiration and rivalry, and two positive (appreciation and intimacy) and two negative (conflict and dominance) indicators of friendship quality. Our results generally supported findings that narcissistic rivalry tends to lead to less positive and more negative experiences in social relationships. In the RI-CLPMs only appreciation influenced later narcissistic rivalry, and was influenced by narcissistic admiration and rivalry. Results are discussed and future directions are suggested.

Keywords: admiration, rivalry, narcissism, friendship maintenance, relationship quality, RI-CLPM

Introduction

Social relationships fulfill our fundamental need to belong (Baumeister & Leary, 1995), positively affect our well-being (Cohen & Wills, 1985; Pinquart & Sörensen, 2000; Sherman et al., 2006), our happiness (Demir & Weitekamp, 2007), and our physical and mental health (Chopik, 2017; Uchino, 2009; van Harmelen et al., 2017). To maintain positive and satisfying relationships individuals have to engage in behaviors that foster continuity and development of their relationships (Oswald et al., 2004). Otherwise the relationship quality suffers with rising relationship costs (Clark & Grote, 1998) which can ultimately lead to relationship dissolution. Particularly, in voluntary and non-exclusive relationships, such as modern Western friendships, maintenance behaviors that keep the relationship quality high are important as no familial or other ties (Blieszner & Roberto, 2004) but both individuals' effort are believed to make their relationship last. Providing assurance and support, self-disclosure, spending time together, and constructive problem-solving have been suggested to be important for friendship maintenance (for an overview see Fehr, 2012; Oswald, 2017) and leading to high relationship quality (e.g., Sprecher & Hendrick, 2004).

While these behaviors seem normal to most individuals, they can be a challenging endeavor for individuals with high narcissism, who tend to overlook feelings and needs of others, do not return favors, and if threatened react with rage, defiance, and humiliation (Jones & Paulhus, 2010; Morf & Rhodewalt, 2001). While individuals with high narcissism tend to be liked when first met, due to their charming, self-assured, and entertaining behaviors (*narcissistic admiration*), they are often less appealing in the longer term, due to their selfish, insensitive, and aggressive behaviors (narcissistic rivalry; e.g., Back et al., 2013; Leckelt et al., 2015; Paulhus, 1998; Wurst et al., 2017). Relationships of individuals with high narcissism have therefore been described as alternating between idealization and devaluation (Maaß et al., 2018; Morf & Rhodewalt, 2001). This underlying dynamic apparently provides a weak foundation for the maintenance of a friendship and leads us to the question how the two narcissism dimensions admiration and rivalry affect the perceived quality in long-term friendships and vice versa.

In the present study, we collected data from individuals at four measurement occasions spanning one year to gain insight into the bidirectional links between narcissistic admiration and narcissistic rivalry on the one side, and perceived positive

and negative aspects of friendship quality on the other side. We were mainly interested in changes at the within-person level to observe how, for example, deviations from the average in narcissistic rivalry are affected by such deviations of perceived appreciation. This allowed us to draw inferences about the temporal dynamics (see Brauer et al., 2022) between narcissism and friendship quality.

In the following we describe the development of friendships and how aspects of friendship quality vary across time before looking at the narcissism aspects in social relationships in general and its relation to friendship quality in particular.

Friendship Stages

While there is a profound body of research on family and romantic relationships, surprisingly, friendships are less often the focus of research (Berscheid & Regan, 2005; Fehr & Harasymchuk, 2019; Harris & Vazire, 2016). One reason might be that friendships are less binding, exclusive, and regulated compared to family or romantic relationships (Harris & Vazire, 2016) and thus their influence on people's lives may be less intense. Another reason may be that it is harder to define what a friendship is. It is for example not as set what makes a friend the best friend or whether one can have one best friend only or a few equally very good friends. This is also reflected in the literature where several working definitions of friendship have been proposed but no agreement on a universal definition exists (Fehr, 1996; Wrzus et al., 2012). Summing up several important characteristics of modern Western friendships Wrzus et al. (2017) described them as voluntary and informal relationships between peers, which rely on reciprocity and are perceived as pleasant and positive (see also Blieszner & Roberto, 2004; Demir et al., 2007; Fehr & Harasymchuk, 2019; Hartup & Stevens, 1997).

Since friendships are less normative and regulated compared to other relationships, it has further been assumed that friendships are more susceptible to effects of personality differences (Wrzus et al., 2017). For example, highly agreeable individuals tend to take better care of and have more flourishing friendships (Jensen-Campbell et al., 2002; Selfhout et al., 2010) than those being less agreeable. The medium sized (Cohen, 1992) negative correlation of agreeableness and narcissistic rivalry, and the small negative relation with narcissistic admiration (Back et al., 2013; Leckelt et al., 2018) provide a first hint that individuals with higher narcissism may perceive their friendships to be of lower quality. The medium sized positive

correlations of antagonism from the Personality Inventory for DSM-5 with both narcissism aspects (Rek et al., 2021; Wright et al., 2013) point in a similar direction.

A model describing the development of friendships has been proposed by Fehr (1996, 2012) who suggested to distinguish three stages of friendship development: friendship formation, friendship maintenance, and friendship deterioration. During these three stages the importance of different relationship variables varies: While physical attractiveness, reciprocity of liking or contact frequency are particularly important during friendship formation, self-disclosure and (emotional) support become more important during friendship maintenance (Fehr, 2012; Oswald et al., 2004). Similarly Buhrmester et al. (1988) suggested that it is social skills that are important during friendship formation, and warmth and support during friendship maintenance. Constructive problem solving and conflict resolution skills gain importance to avoid dropping into the deterioration stage or ending in dissolution (Fehr, 2012). Furthermore, perceived equity and equality are important features of friendship quality (Mendelson & Kay, 2003) and may protect friendships against dissolution. Given these features which make a friendship last or dissolve, even the layperson may wonder, why a person maintains the friendship to a narcissistic individual and how in turn narcissistic individuals perceive friendships.

The lack of a clear definition of a phenomenon (such as friendship) also makes the phenomenon difficult to measure and evaluate. Here we operationalized friendship with four indicators of perceived friendship quality: *appreciation*, *intimacy*, *conflict*, and *dominance* (Furman & Buhrmester, 1985; Walper et al., 2010). We chose these indicators capturing positive and negative aspects of friendships to be able to evaluate deviations in the perception of friendships as a function of individual difference variables, namely narcissistic admiration and rivalry. While the assessment of positive and negative aspects of friendship quality generally has been recommended (Berndt, 2002), we assumed that it would be particularly interesting when the influence of a maladaptive trait such as narcissism is observed, which tends to exert a rather negative influence on social relationships. We chose the four friendship aspects appreciation, intimacy, dominance, and conflict to align our measurement with key features of friendship models (Furman & Buhrmester, 1985; Walper et al., 2010).

Narcissism in Social Relationships

While individuals scoring high on narcissism attract and fascinate others on the one hand, they are unappealing or even repelling on the other hand. Both, however, serves the maintenance and validation of the grandiose self, which lies at the core of narcissism (Morf & Rhodewalt, 2001). To explain this, Back et al. (2013) suggested two pathways: the desire for social admiration reached through assertive self-enhancement, and the prevention of social failure reached through antagonistic self-protection. Assertive self-enhancement is expressed in charming, self-assured, and exaggerating behaviors (Back et al., 2010; Campbell & Campbell, 2009; Paulhus, 1998) and feelings of uniqueness and entitlement (Emmons, 1984), which have been subsumed under *narcissistic admiration* (Back et al., 2013). Positive affirmation of these behaviors is thought to boost self-enhancement in turn. Antagonistic self-protection is expressed in selfish, hostile, and aggressive behaviors (Bushman & Baumeister, 1998; Morf & Rhodewalt, 1993; Vazire & Funder, 2006) and feelings of supremacy, which have been termed *narcissistic rivalry* (Back et al., 2013). A threat to these superiority feelings has been assumed to strengthen self-protection.

Previous studies have shown that narcissistic admiration drives first liking while narcissistic rivalry becomes increasingly problematic in peer (Leckelt et al., 2015) as well as in romantic relationships (Wurst et al., 2017). Even over a timespan, as short as three weeks, narcissistic admiration was shown to lead to initial popularity (Leckelt et al., 2015) while narcissistic rivalry had an increasingly negative effect (Leckelt et al., 2020; Leckelt et al., 2015). That the initial popularity of individuals with high narcissism is rather short-termed was also shown by Czarna et al. (2016) who found that over three months the popularity of individuals with high narcissism increased less than the popularity of individuals with lower narcissism (see also Paulhus, 1998).

However, to our knowledge, all studies that observed narcissism with regard to friendships focused on relatively short time periods after first acquaintance and little is known about the phase of friendship maintenance (see also Maaß et al., 2018). Clearly, once this friendship stage has been reached, the initial dynamics of narcissistic admiration and rivalry and their outcomes have been overcome. Yet, it remains unclear how and if these traits continue to affect relationship quality. The only evidence of narcissistic admiration and rivalry in long-term relationships stems from romantic relationships: For romantic relationships lasting for at least one year it was

found that individuals higher on narcissistic rivalry evaluated their partners less positively and were likewise perceived less positively by their partners (Study 5; Wurst et al., 2017). Furthermore, in long-term contexts, narcissistic rivalry was related to conflicts and the perception of lower relationship satisfaction and quality in both the targeted individual and her or his romantic partner (Studies 6 and 7; Wurst et al., 2017). More generally, in couples dating for five or eleven years on average, a medium sized negative correlation between grandiose narcissism and relationship satisfaction has been found (Casale et al., 2020; Gewirtz-Meydan & Finzi-Dottan, 2018).

Narcissism and Friendship Qualities

Maintaining a friendship appears to be easier for some individuals than for others (Wrzus et al., 2017), and we propose that the friendships of individuals with higher narcissism, especially those scoring higher on rivalry, will be of lower quality and involve more difficulties. To test this, we observed two positive (intimacy and appreciation) and two negative indicators (conflict and dominance) of friendship quality in this study.

Intimacy, often also called self-disclosure, has been a common variable in research on friendships and identified to be of great importance for friendship maintenance (Fehr, 2012; Oswald, 2017). It has been suggested that intimacy is less important for an individual with high narcissism, as self-disclosure may make it difficult to retain one's overly positive self-image (Campbell, 1999; Maaß et al., 2016)[4]. Thus, an individual scoring high on admiration may invest less into interpersonal strategies such as intimacy to maintain a relationship and rather direct attention towards the self. If personal information is shared, it is likely primarily superficial and may hamper actual intimacy (Maaß et al., 2018). We had no specific prediction for the relation of narcissistic admiration and perceived intimacy, as we considered a positive or no substantial relation would be plausible. We assumed narcissistic rivalry to be negatively related to perceived intimacy, as the gradual increase in depth of shared information in a lasting friendship (Fehr, 2012) would likely diminish the narcissists' feelings of superiority as his or her positive self-image could be undermined. We also assumed that at the within-person level, deviations from average levels of narcissistic

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[4] In these studies narcissism was operationalized as grandiose narcissism which mainly overlaps with admiration and to a lesser extent with rivalry (see Crowe et al., 2019; Krizan & Herlache, 2018).

rivalry would be negatively associated with deviations in perceived intimacy and vice versa.

The enhancement of worth through *appreciation* is an aspect of friendship quality which may be particularly relevant with regard to narcissism. Appreciation involves the approval, affirmation of one's own worth, and the respect that is shown to one by someone else (Furman & Buhrmester, 1985). Appreciation has recently been observed in a study on narcissism in romantic relationships, where it was termed respect (e.g., "I approve of the person my partner is."; Vrabel et al., 2021). It was found that narcissistic admiration was not, and narcissistic rivalry was negatively related to perceived respect from the partner ($r = -.21$). An expression of appreciation could be the time spent with a friend, as a reassurance of worth. Spending time with a friend was found to be positively linked to narcissistic admiration but unrelated to narcissistic rivalry (Leckelt et al., 2019). Based on these findings we had no clear assumption of the relation between appreciation and narcissistic admiration. Based on Vrabel et al. (2021) we assumed a negative relation of appreciation and narcissistic rivalry. Similarly, at the within-person level we assumed that upward deviations from the average in narcissistic rivalry would go along with downward deviations in perceived appreciation and vice versa. This would reflect that a person showing more narcissistic rivalry behavior than usual might feel less appreciation. Likewise, a person feeling less appreciated than usual might then portray more rivalry behavior than usual.

Dominance, being part of the behaviors shown by individuals higher on narcissistic admiration (e.g., Leckelt et al., 2020), is an interesting quality of friendships as it represents the relative power in a friendship. Equity and equality have been found to be important features of friendship quality (Mendelson & Kay, 2003), thus high dominance is likely to be detrimental to friendships. Closest to dominance in previous research related to narcissism is the concept of perceived power (e.g., "My partner has more influence than I do on decisions in our relationship") which has been observed in romantic relationships by Vrabel et al. (2020). They found a small positive relation of narcissistic admiration and perceived power ($r = .14$), whereas narcissistic rivalry was not substantially related to perceived power. Therefore, we expected a positive relation of dominance with narcissistic admiration and had no specific assumption regarding the relation to narcissistic rivalry. Within individuals, we expected upward deviations in narcissistic admiration to be related to upward deviations in dominance and vice

versa. This would reflect that a person showing more narcissistic admiration behavior than usual might then show more dominant behavior, and when showing more dominant behavior than usual subsequently showing more narcissistic admiration.

Conflict, as a mainly negative component of friendship quality, is important because when it frequently occurs, it can lead to friendship deterioration (Laursen & Adams, 2018). Even though closer friendships may permit a certain amount of conflicts, a successful conflict management is necessary to maintain a friendship (Canary et al., 1995). In both friendships and romantic relationships it has been found that narcissistic admiration was related to problem-focused behavior ($r = .18$) as well as marginally to revengeful behavior ($r = .10$), while narcissistic rivalry was related to revengeful ($r = .35$) and slightly less problem-focused behavior ($r = -.11$; Back et al., 2013). The revenge-oriented behaviors, particularly when they are shown openly and over a longer period of time, will likely lead to conflict and may eventually lead to friendship deterioration. Wurst et al. (2017) simultaneously regressed conflict on admiration and rivalry and found a negative relation to admiration ($\beta = -.06$) and a positive relation to rivalry ($\beta = .13$). Based on these previous findings we expected narcissistic rivalry to be positively linked to conflict, and while we had no specific expectation with regard to narcissistic admiration and conflict. At the within-person level we assumed that upward deviations from the average in narcissistic rivalry would go along with subsequent upward deviations from the average in perceived conflict and vice versa. This would reflect that a person showing more narcissistic rivalry behavior than usual might then perceive more conflicts. Likewise, a person perceiving more conflicts than usual might then show more rivalry behavior. We had no specific expectation for narcissistic admiration.

Potential Mechanisms of Change in Friendship Quality and Narcissism

In their contextual reinforcement model Campbell and Campbell (2009) suggested that the influences of narcissistic behavior on (romantic) relationships varies over time with fluctuations in relational benefits and costs for both an individual with high narcissism and their interaction partner. Similarly, in the narcissism in situations framework (NARCIS; Maaß et al., 2018) it was proposed that person and situation factors influence the expression of narcissistic behavior. For instance, while in one situation the experience of admiration through the friend may lead the individual with high narcissism to feel more appreciated than usual, in another situation a negative

interaction may trigger self-defense which leads to subsequent conflict. The previous research showing negative associations between narcissism and relationship quality in long-term relationships at the between-person level (e.g., Wurst et al., 2017), led us to the assumption that the effects which were found for friendship formation (Back et al., 2013; Leckelt et al., 2015) would resurface, if there is a deviation from the average. So after the formation stage, the friendship may settle and the initial effects of narcissistic admiration and rivalry might be overcome. But, if the system is disturbed (by deviations from average), the processes may be reignited, like perceiving the friend anew and therefore reevaluating the friendship quality.

The Present Study

Overall, research on friendship maintenance and narcissism is rare (see Maaß et al., 2016 for an exception) and to our knowledge it has not yet been observed how narcissists perceive the quality of their long-term friendships. Furthermore there is only little longitudinal evidence regarding friendships of individuals with high narcissism (e.g., Leckelt et al., 2015). We tried to narrow this gap by observing narcissistic admiration and rivalry and their relations to two positive (intimacy and appreciation) and two negative indicators (conflict and dominance) of friendship quality across four time points spanning a period of one year. At the between person-level we observed correlational relations of the narcissism and friendship quality aspects. Our focus, however, was on the within-person level. In order to reflect potential effects caused by a within person deviation from ones typical narcissistic behavior or friendship experience, we used random intercepts cross-lagged panel models. We considered these models particularly fitting to our data as they are able to capture fluctuations around stable person means (Lüdtke & Robitzsch, 2021), such as the aspects of narcissism in this study.

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Method

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Procedure

Social media platforms, flyers, and email lists were used to recruit participants. To ensure that participants reported on the maintenance phase of their friendship we asked participants to report on a friendship which had lasted for at least two years. Moreover, we asked participants to report on the relationship to their best or at least a close friend, as best friends have been found to report higher levels of friendship

quality compared to close and casual friends, and close friends higher than casual friends (Oswald et al., 2004). The intervals between the four measurement occasions were three months each. Participants received up to three email reminders asking them to continue their participation. After each assessment participants received feedback on different personality traits. Psychology students additionally received course credit. We used the survey platform *formr* for data collection (Arslan et al., 2020).

Participants

A total of $N = 831$ individuals from all over Germany participated. Of these $n = 619$ continued their participation at T2, $n = 484$ at T3, and $n = 420$ at T4. At T1 the age of participants ranged from 18 to 79 ($M = 26.2$, $SD = 8.2$, $Mdn = 24$), 80.6% identified themselves as women, 18.5% as men, while 0.9% indicated another or no gender. The majority of the sample had finished secondary (50.3 %) or tertiary education (31.6%). In total 64.9% of the sample reported that they were studying, 27.9% that they were working. Participants reported on their own narcissism levels and the relationship quality to a good friend. 62.1% reported on the relationship to their best friend, 26.2% to a very close friend, and 11.7% to a less close friend. Participants were on average friends with the person they reported on for 9.23 years ($SD = 7.11$, $Mdn = 7$).

Chi-square and *t*-tests were used to compare age, gender, education and friendship length of individuals at T1 to those who continued to participate at T2, those of T2 to T3, and those T3 to T4. No differences emerged (see Table S1 in the supplement for details). With regard to narcissism individuals at T1 scored higher in admiration and rivalry than those who continued to participate at T2 (see Table S2). With regard to friendship quality individuals at T1 scored lower in appreciation and intimacy and higher in dominance than those at T2 (see Table S2). For the following measurement occasions no differences emerged. Data, codebook, and code can be found on the Open Science Framework (https://osf.io/vf6ry/?view_only=efbe077563ac4e9d9d740123e4c6815c).

Instruments

Narcissism. At T1 the Narcissistic Admiration and Rivalry Questionnaire (NARQ; Back et al., 2013), at T2 to T4 its abbreviated version NARQ-S (Leckelt et al., 2018) was used to assess *narcissistic admiration* (e.g., "I deserve to be seen as a great personality.") and *narcissistic rivalry* (e.g., "I want my rivals to fail."). For comparability

at T1 only the items of the NARQ were used that are part of the NARQ-S. Both

narcissism aspects were rated on three items on a rating scale ranging from 1 (*not agree

at all*) to 6 (*agree completely*).

        Friendship Quality. An adapted version of the Network of Relationships

Inventory (NRI; Furman & Buhrmester, 1985) was used, which has also been part of the

Panel Analysis of Intimate Relationships and Family Dynamics (pairfam; Walper et al.,

2010). The four constructs *appreciation* (e.g., "How much does your friend like or

approve of the things you do?"), *conflict* (e.g., "How often are you and your friend angry

with or get mad at each other?"), *dominance* (e.g., "How often does your friend assert

him-/ herself, when you disagree?"), and *intimacy* (e.g., "How often do you share secrets

and private feelings with your friend?") were assessed with two items each. The rating

scale ranged from 1 (*never*) to 5 (*always*).

Analytic Strategy

        All analyses were conducted in R (R Core Team, 2020) and R Studio. First, all

measurement models were tested for measurement invariance to ensure comparability

of the constructs over time. For narcissistic admiration and rivalry, the test for

configural invariance was followed by those for metric, and scalar invariance. For the

friendship quality constructs only metric and scalar invariance were tested. Here each

construct was assessed with only two indicators, thus factor loadings were fixed to 1 to

ensure identification of the measurement models. These equal factor loadings already

meet the requirements of metric invariance. Decreases of more than .010 in

comparative fit indices (CFI) and of .015 in root mean square error of approximation

(RMSEA) were interpreted in favor of the less restricted models (Chen, 2007). These

cut-offs where chosen above those suggested by Meade et al. (2008), as the latter were

proposed to be too conservative (Little, 2013). When scalar invariance could not be

established, we tested for partial scalar invariance.

        We used random intercepts cross-lagged panel models (RI-CLPM; Hamaker et

al., 2015) to observe the effects of temporary deviation from the average narcissism level

(admiration and rivalry) on temporary deviations from the friendship quality level

(appreciation, conflict, dominance, and intimacy) and vice versa. This model is an

extension of the more commonly used cross-lagged panel model (CLPM) overcoming

some of its problems. In the RI-CLPM latent random intercept factors are added to the

CLPM with all its factor loadings constrained to 1. These random intercept factors

capture the stable between-person differences and consequently the cross-lagged effects capture the within-person deviation. For example, a significant cross-lagged effect might indicate that individuals scoring higher on rivalry than they usually do, experience a subsequent increase in conflict or a decrease in appreciation, which means a deviation from the average of those variables. In comparison, a substantial cross-lagged effect in a CLPM would indicate that individuals scoring high on rivalry relative to others would experience a subsequent rank-order increase in conflict or decrease in appreciation compared to individuals scoring low on rivalry. Similarly, a substantial autoregressive effect in RI-CLPM implies that time points on which an individual scores higher than usual are likely to be followed by time points on which the individual scores again above the score expected based on the person's average. In the CLPM, by contrast, a substantial autoregressive effect would represent the rank-order stability of individuals from time point to time point. Due to equally spaced intervals between time points and to improve interpretability, effects were constrained to be equal across time. These equality constraints across waves have been recommended to reduce complexity and improve precision (Orth et al., 2020; see also Oh et al., 2021). Full information maximum likelihood estimation was used to handle the missing data issue.

Results

Descriptive Statistics

Means and standard deviations of each variable at the four time points, reliability and stability[5] estimates are shown in Table 1. Cohen's *d* coefficients illustrating change at the mean-level can be found in the supplement (Table S2). The only substantial changes were found between T1 and T2. The differences in the narcissism scale scores may have occurred due to the different versions of the measurement at T1 (NARQ) and T2-T4 (NARQ-S) but could also be related to attrition, such that those individuals with higher narcissism scores did not continue to participate. Zero-order correlations between narcissism aspects and friendship quality indicators across time points are shown in Table 2. Within time points both admiration and rivalry generally showed the highest relations with conflict (*r*s = .09 to .16) and no substantial relations with dominance. Moreover, rivalry was found to be negatively

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[5] As suggested by an anonymous reviewer we used ICCs as an estimate of stability.

related to intimacy (rs = -.11 to -.16) and appreciation (rs = -.05 to -.17; within time points). A full correlation table including exact p-values can be found in the supplement (Table S3).

Measurement Invariance

The results of the measurement invariance tests are shown in Table S4 in the supplement. According to Chen's (2007) guidelines we found scalar invariance for narcissistic admiration and all four friendship quality constructs. For narcissistic rivalry we found partial scalar invariance with loosened equality constraints for one item ("I want my rivals to fail").

Random Intercepts Cross-Lagged Panel Models

Overall model fits of the RI-CLPM were good (all CFIs > .98, all RMSEAs <.06). Model fits are presented in detail in Table S5. Unstandardized autoregressive and cross-lagged effects can be found in Table 3[6]. We found significant cross-lagged effects in the models of appreciation and narcissistic admiration (Figure 1), as well as appreciation and narcissistic rivalry (Figure 2). These indicate that in individuals scoring lower on narcissistic admiration or rivalry than they usually do, experienced a subsequent increase in their perception of appreciation, and those who perceived lower appreciation than they usually do experienced a subsequent increase in narcissistic rivalry. We also found significant autoregressive effects for narcissistic rivalry, appreciation, intimacy, and dominance. These indicate that, for example, an individual scoring higher on narcissistic rivalry than usual was likely to score higher on narcissistic rivalry at the following time point again.

Moreover, the variance of the random intercepts was significant across models, implying trait-like differences between individuals on both narcissism aspects and all four friendship quality indicators. For conflict and admiration, we found a significant positive relation between the random intercepts of r = .21, p < .001, suggesting that individuals scoring generally higher in admiration generally experience more conflicts. This also applied to individuals scoring generally higher on rivalry, r = .19, p = .006. The random intercepts of intimacy and rivalry were negatively related, r = -.17, p = .001, suggesting that individuals scoring generally higher in rivalry perceive generally less intimacy.

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[6] Effects remained stable when it is controlled for friendship length.

Discussion

In the present study we observed the relations between narcissistic admiration and rivalry, and friendship quality across four time points. While previous studies mainly observed short-term acquaintances (e.g., Czarna et al., 2016; Leckelt et al., 2015) we focused on intraindividual changes in long-term friendships which had existed for at least two years. Moreover, we focused on the effects of changes in narcissistic behavior and friendship experience from their respective averages. Our main findings showed that perceived appreciation seemed to lead to deviations in narcissism aspects and vice versa. Thus, if one feels less appreciated the processes of narcissistic admiration and rivalry shown during the formation of friendships seem to be reignited. The other indicators of friendship quality (perceived conflict, dominance, and intimacy) seem not to influence the stability of narcissistic admiration and rivalry. We discuss this in further detail below and examine the potential fit of our findings to existing models.

How Do Aspects of Friendship Quality and Narcissistic Admiration and Rivalry Interact?

At the Between-Person Level

Based on previous research we assumed narcissistic rivalry to be negatively related to intimacy and appreciation, which was confirmed by the bivariate correlations within time points and also tended to apply across most time points. This finding shows that in particular in friendships of individuals scoring higher in rivalry, positive aspects of friendship quality are missing, which might be a reason for generally fewer close friendships in those scoring higher in rivalry (Degro et al., 2021).

Furthermore, we expected both narcissistic admiration and rivalry to be related to conflict which was supported by the bivariate correlations. Interestingly, relations of both narcissism aspects to conflict were similar, while theoretically and also based on previous studies (e.g., Back et al., 2013) it could have been expected that the relation between narcissistic rivalry and conflict would be higher than the relation between narcissistic admiration and conflict. We found no differences in conflict between time points across the one-year study period. Thus, perceived conflicts did not seem to lead to relationship dissolution. This further informs the contextual reinforcement model by Campbell and Campbell (2009) by showing that friendship dissolution does not seem to happen suddenly when costs and benefits do not match once the maintenance

stage of a friendship is reached. In addition to the costs that can arise from conflict, conflict could also weaken the benefits that come from appreciation or social support by interrupting or weakening ongoing processes (see Laursen & Adams, 2018 for a similar reasoning). Further information on content and handling of conflicts would be needed to better understand the influence of conflicts on friendships with individuals with higher narcissism.

We also assumed narcissistic admiration to be related to dominance, which was generally not found. This is contradictory to the positive relations found between narcissistic admiration and dominant-expressive behavior (Leckelt et al., 2020) as well as perceived power (Study 1; Vrabel et al., 2020). However, Vrabel et al. (2020) could not replicate their finding in a further study (Study 2). In part, our result could be related to the items we used to assess dominance, which focused on the friend rather than the targeted individual (e.g., "How often does your friend assert him-/ herself, when you disagree?"). Self-rated dominance was only indirectly assessed, which might not have been ideal.

In sum, based on the bivariate correlational results the finding that rivalry compared to admiration is the more problematic part of narcissism for social relationships (Leckelt et al., 2020; Leckelt et al., 2015; Vrabel et al., 2021; Wurst et al., 2017) was confirmed for long-term friendships.

At the Within-Person Level

We observed the temporal interdependency of narcissistic admiration and rivalry with four friendship quality aspects at the within-person level. RI-CLPM showed that the individuals' perception of appreciation played a crucial role: Individuals who scored lower on narcissistic admiration or rivalry than they usually would have, subsequently increased in perceived appreciation, and those who felt less appreciated than usual subsequently increased in rivalry. These findings indicate that not feeling valued and appreciated has an important connection to narcissistic rivalry. In turn, the antagonistic and self-protective behavior, which is characteristic of narcissistic rivalry (Back et al., 2013), then seems to lead to feeling less appreciated. Processes which have been found to play a crucial role during the formation of friendships (e.g., Leckelt et al., 2015) thus appear to play out again in the maintenance of friendships. It also would have been reasonable to assume that feeling more appreciated than usual leads to an ego-boost (see NARC; Back et al., 2013), which

increases self-promotional behavior, i.e., leads to higher admiration. However, that was not supported by our data.

For conflict, dominance, and intimacy we did not find any effects on narcissistic admiration and rivalry or vice versa. This is noteworthy, as, for example, the zero-order correlation of narcissistic rivalry and conflict was expected and found to be negative could have led to the expectation that perceived conflicts are likewise influential at the intraindividual level. The narcissistic admiration and rivalry concept (Back et al., 2013) also predicts that social conflict leads to ego threat, increases in self-defense, and eventually higher narcissistic rivalry. This was not confirmed in our data. Even though the participants were asked to focus on the past three months when answering the questions regarding their perceived friendship quality it could be that conflicts were of a short duration and in hindsight evaluated less influential while appreciation might have been perceived more continuous. More and closer assessments would be needed to explore this possibility.

Overall, our results indicate that it is worth to consider both the between- and the within-person level when narcissism is studied in the context of social relationships. Conflict, intimacy, and appreciation showed substantial relations with the two narcissism aspects at the between-person level, while only perceived appreciation was influenced by and influenced narcissism at the within-person level. In the evaluation of these results, it should be noted that effects of a single friendship are likely to be rather small as most individuals have several others they also interact with, such as their romantic partner, other friends, colleagues or family members. Thus, the effect of a low-quality friendship might be compensated in the relationship with another person.

How Do our Results Link to Theoretical Models?

Our findings for appreciation indicate that the processes assumed by the NARC model (Back et al., 2013), which have been shown to occur during relationship formation, are at least partly reactivated in long-term friendships. The RI-CLPM, however, only allows to test for temporary deviations from stable person means but given the general stability of narcissism we considered this the best approach to test interactional effects of narcissism and friendship quality in our data with only three months between assessments (see Oh et al., 2021 who applied RI-CLPMs with one year between assessements). The temporary influences of friendship quality could

ultimately also lead to changes in narcissism, as described in the NARCIS (Maaß et al., 2018) or more broadly in the TESSERA framework (Wrzus, 2021; Wrzus & Roberts, 2017). The latter postulates that the accumulation of state change leads to long-term personality change. A triggering situation (T) could be telling the friend about a job success, with the individual expecting (E) the friend to react with appreciation. The friend might express less appreciation than usual and less than expected (states / states expression; SSE), which then could trigger an aggressive or devaluing reaction (RA) towards the friend (i.e., higher rivalry). When this and similar situations (also across relationships) would happen repeatedly, it could explain why the individual maintains or even increases in her or his level of narcissistic rivalry. To actually test whether the TESSERA framework can explain changes of narcissism aspects within friendships an observation at a more fine-grained level would be needed. Event-based assessments could be used when an individual meets the target friend, which would support the observation of triggering situations and expectancies.

Limitations and Future Directions

Studying narcissism in long-term friendships across four measurement occasions makes this study unique. Nevertheless, some limitations have to be considered. First, our sample was not very balanced in terms of gender with the majority of participants reporting to be female. Given the gender differences in narcissistic admiration and rivalry with men generally scoring higher than women (e.g., Leckelt et al., 2018) and gender differences regarding friendship maintenance behaviors (Oswald et al., 2004) and perceived friendship quality (Zhou et al., 2012) results should be generalized with care. Second, the used instruments were all relatively short assessing the constructs with two or three items, respectively. This helped to minimize participant burden but potentially limited score reliability and construct coverage (see Kemper et al., 2018 for a summary). Third, attrition was relatively high with a bit more than half of the participants continuing their participation until the last assessment (see Table 1), as the only motivation to continue to participate was a feedback on some of the assessed traits. Differences in narcissism and friendship quality between time points were found only between T1 and T2, where the attrition was highest with about 25% of the sample dropping out. We cannot rule out that interactional problems were a reason for dropout as participants at T1 perceived their friendship quality to be lower (except for conflicts where no difference

emerged) and rated themselves as more narcissistic than those how continued to participate at T2. Thus, the current effects might even be more pronounced if the individuals which perceived more problems in their friendships had stayed in the sample. Fourth, we did not specifically indicate that the friend, participants reported on, should not be a family member or their romantic partner. However, as participants in romantic relationships were asked to also report on their romantic relationship quality the latter is rather unlikely.

In future research it would be interesting to observe different kinds of relationships to be able to compare effects which have been found for friendships to, for example, romantic relationships. It could be assumed that effects are stronger in romantic relationships which are usually closer and more committed. Moreover, an aspect that someone misses in a friendship may be compensated by another friendship, which is unlikely in a romantic relationship. Whether this happens for individuals which are friends with someone scoring high on narcissism could be explored by getting the perspective of two friends on their and other friendships they have. An individual may be willing to accept little emotional support in a friendship to an individual with higher narcissism when other friendships compensate for it. Also, the aspects of relationship quality which are influential in different relationships may vary. For example, we did not find a robust relation of narcissistic admiration or rivalry and dominance within friendships, while in general the relation between grandiose narcissism and dominance is well established (see Edershile et al., 2019). Moreover, it would be interesting to use a dyadic design exploring the relation of two friends' narcissism and its impact on friendship quality to take interdependencies into account (Kenny et al., 2006).

Conclusion

We observed the relation of the narcissism aspects admiration and rivalry with positive and negative friendship quality indicators to approach the question how narcissism relates to the perception of long-term relationships. Narcissistic admiration and rivalry were both found to be related to conflict, rivalry was also negatively related to intimacy and appreciation. At the intraindividual level we found that those individuals who scored lower on narcissistic admiration or rivalry than usual experienced a subsequent increase in appreciation, and those who perceived lower appreciation than usual experienced an increase in rivalry. Our assumption that effects

found for friendship formation (Back et al., 2013; Leckelt et al., 2015) would reignite during friendship maintenance if there is a deviation from the average, were at least partially supported. Overall, it seems worthwhile to look at different aspects of friendship quality to understand the influence of narcissism on long-term relationships, and also to differentiate between inter- and intraindividual effects.

References

References were integrated with the references of the synopsis and the other manuscript and are jointly presented at the end of this dissertation.

Table 1

Means and Standard Deviations at T1 to T4

	M (SD)				Reliability estimate$_{T1^*}$	Stability estimate (ICC)
	T1	T2	T3	T4		
Admiration	2.52 (1.19)	2.78 (1.07)	2.78 (1.20)	2.78 (1.20)	.75	.71
Rivalry	1.90 (0.85)	2.12 (0.88)	2.05 (0.89)	2.01 (0.90)	.82	.69
Appreciation	4.02 (0.75)	3.89 (0.82)	3.87 (0.82)	3.85 (0.89)	.63	.63
Conflict	1.97 (0.71)	1.90 (0.73)	1.86 (0.72)	1.88 (0.72)	.73	.71
Dominance	2.78 (0.69)	2.70 (0.71)	2.71 (0.71)	2.73 (0.75)	.63	.61
Intimacy	4.09 (0.78)	3.96 (0.86)	3.88 (0.88)	3.84 (0.94)	.71	.66

Note. Admiration and rivalry: n_{t1} = 831, n_{t2} = 619, n_{t3} = 484, n_{t4} = 420; Friendship measures: n_{t1} = 828, n_{t2} = 599, n_{t3} = 471, n_{t4} = 409. At T1 means of the NARQ-S items are presented. Those of the NARQ are as follows: admiration M = 3.03 (SD = 0.89), rivalry M = 2.04 (SD = 0.74).

[*] For admiration and rivalry McDonald's omega was used as reliability estimate, for the friendship quality measures the test-retest correlation from T1 and T2 is shown.

Table 2

Correlations Between Narcissism Aspects and Friendship Quality Indicators

		Admiration				Rivalry			
		T1	T2	T3	T4	T1	T2	T3	T4
Appreciation	T1	.04	-.01	-.01	-.01	-.05	-.04	-.08	-.03
	T2	-.02	-.04	-.04	-.01	-.09*	-.09*	-.09	-.05
	T3	.01	-.07	-.02	-.03	-.15**	-.16**	-.17***	-.16**
	T4	-.04	-.02	-.06	-.01	-.09	-.09	-.15**	-.12*
Conflict	T1	.15***	.20***	.21***	.17***	.11**	.13**	.12**	.17***
	T2	.05	.13**	.14**	.10*	.11***	.15***	.14**	.15**
	T3	.11*	.17***	.16***	.12*	.09*	.13**	.10*	.13*
	T4	.10*	.10*	.15**	.09	.06	.12*	.09	.11*
Dominance	T1	.06	.06	.04	.03	.01	<.00	.04	.03
	T2	.04	.09*	.08	.07	.05	.04	.05	.05
	T3	-.01	.10*	.05	.02	-.01	.04	.02	.01
	T4	-.01	.01	-.01	.01	-.07	-.01	-.06	-.02
Intimacy	T1	.03	.03	.04	.03	-.11**	-.12**	-.08	-.07
	T2	.01	.02	.01	.01	-.14**	-.16***	-.11*	-.10
	T3	-.04	-.03	-.01	-.01	-.16**	-.14**	-.14**	-.14**
	T4	-.03	.01	-.01	.01	-.14**	-.15**	-.13*	-.13*

*Note.* *$p < .05$; **$p < .01$; ***$p < .001$.

Table 3

Unstandardized Autoregressive and Cross-Lagged Effects of RI-CLPM

Friendship variable	Narcissism aspect	Friendship → Narcissism	Narcissism → Friendship	Friendship → Friendship	Narcissism → Narcissism
Appreciation	Admiration	-.06	-.08*	.43***	.09
	Rivalry	-.13**	-.16**	.40***	.22**
Conflict	Admiration	-.01	-.03	.11	.08
	Rivalry	.00	-.02	.11	.22**
Dominance	Admiration	-.02	.01	.18**	.08
	Rivalry	-.04	-.01	.19**	.21**
Intimacy	Admiration	.08	.05	.45***	.08
	Rivalry	-.06	.00	.44***	.22**

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

Figure 1

RI-CLPM of Admiration and Appreciation
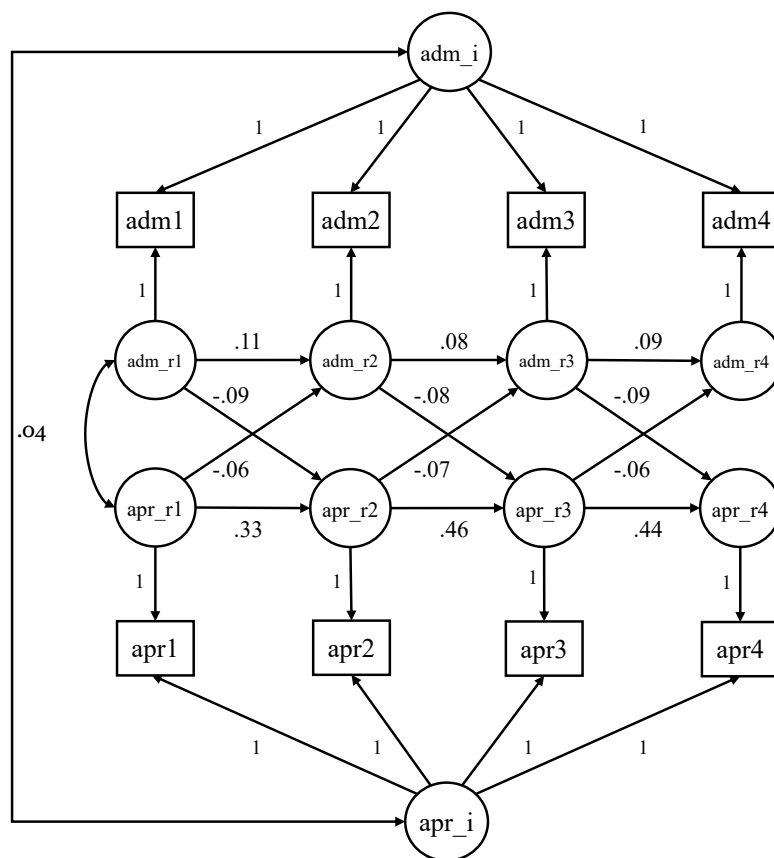
Note. Adm = admiration; apr = appreciation. Standardized parameter estimates are shown. Correlated residuals are not depicted. Autoregressive effects of appreciation are significant with $p < .01$, cross-lagged effects of admiration on appreciation are significant with $p = .04$.

Figure 2

RI-CLPM of Rivalry and Appreciation
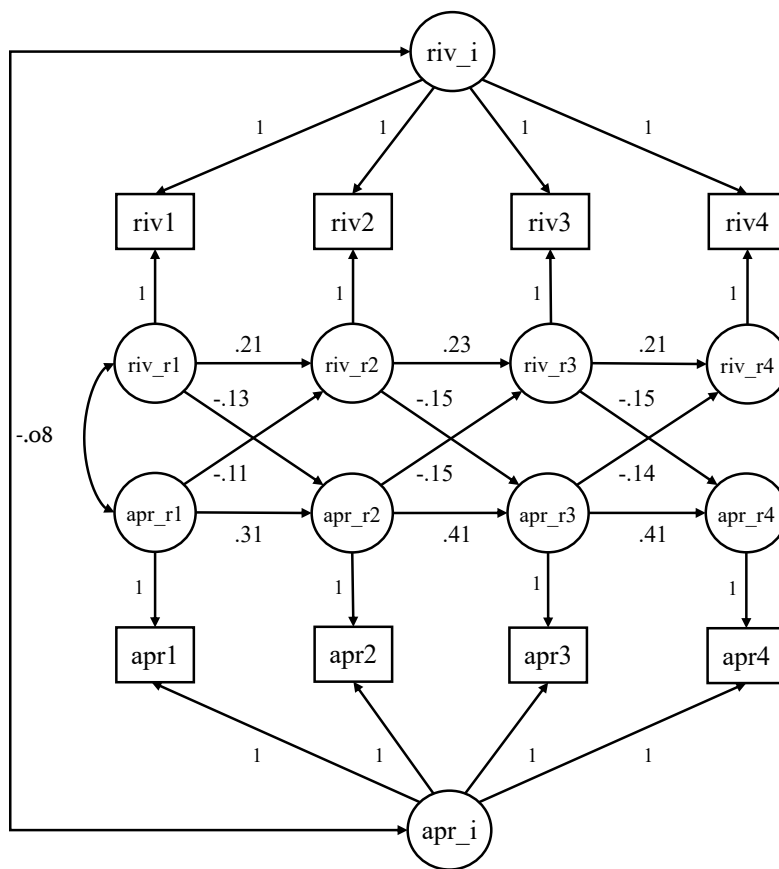
Note. Riv = rivalry; apr = appreciation. Standardized parameter estimates are shown. Correlated residuals are not depicted. All autoregressive and cross-lagged effects are significant with $p < .01$.

Supplementary Material

Table S1

t-Tests and Chi-Square Tests to Compare Demographic Variables of T1 to T2-T4

Variables	t	df	p	Cohen's d	95% CI for Cohen's d	
					lower	upper
Age						
T1-T2	0.15	1325.70	.88	0.01	-0.09	0.11
T2-T3	0.68	1005.4	.50	0.04	-0.08	0.16
T3-T4	0.46	885.04	.65	0.03	-0.10	0.16
Gender*						
T1-T2	0.85	1	.36	0.03	0.00	0.08
T2-T3	0.01	1	.94	0.01	0.00	0.06
T3-T4	0.01	1	.99	0.00	0.00	0.07
Education*						
T1-T2	2.05	9	.99	0.04	0.00	0.09
T1-T3	3.67	9	.93	0.06	0.00	0.12
T1-T4	7.79	9	.64	0.07	0.00	0.14
Rel.-length						
T1-T2	1.38	1317.6	.30	0.06	-0.05	0.16
T1-T3	0.12	1039.5	.90	0.01	-0.11	0.13
T1-T4	0.48	874.7	.63	0.03	-0.10	0.16

Note. * Chi-square test instead of *t*-test was applied and Cramer's V was used instead of Cohen's *d*. Rel = relationship.

Table S2

t-Tests Comparing Narcissism and Friendship Quality Aspects of T1 to T2-T4

Variables	t	df	p	Cohen's d	95% CI for Cohen's d lower	upper
Admiration						
T1-T2	4.47	1347.9	**<.001**	**0.23**	0.15	0.37
T2-T3	0.01	977.91	.996	0.00	-0.14	0.14
T3-T4	0.10	883.3	.922	0.01	-0.15	0.17
Rivalry						
T1-T2	4.76	1299.5	**<.001**	**0.25**	0.13	0.31
T2-T3	1.40	1032.9	.162	0.09	0.03	0.18
T3-T4	0.60	882.8	.549	0.04	-0.08	0.15
Appreciation						
T1-T2	3.10	1425.0	**.002**	**0.16**	0.05	0.21
T2-T3	0.35	1009.1	.721	0.02	-0.08	0.11
T3-T4	0.30	838.52	.763	0.02		
Conflict						
T1-T2	1.69	1425.0	.091	0.09	-0.01	0.14
T2-T3	0.98	1014.5	.327	0.06	-0.04	0.13
T3-T4	0.47	859.6	.642	0.03	-0.07	0.12
Dominance						
T1-T2	2.19	1425.0	**.029**	**0.12**	0.01	0.16
T2-T3	0.38	1068.0	.707	0.02	-0.06	0.10
T3-T4	0.41	842.8	.685	0.03	-0.08	0.12
Intimacy						
T1-T2	2.93	1212.1	**.003**	**0.16**	0.04	0.22
T2-T3	1.44	998.2	.150	0.08	-0.03	0.18
T3-T4	0.62	841.4	.534	0.04	-0.08	0.15

Note. In T1 admiration and rivalry were assessed with the NARQ; for the comparison to T2 only those items which were also included in the NARQ-S were used. Significant differences were bolded.

Table S3

Correlations and p-values

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1. Adm1		<.001	<.001	<.001	<.001	<.001	<.001	<.001	.266	.691	.965	.476	<.001	.258	.022	.038	.080	.308	.885	.854	.367	.806	.440	.546
2. Adm2	.69		<.001	<.001	<.001	<.001	<.001	<.001	.891	.378	.145	.638	<.001	.002	<.001	.046	.141	.022	.030	.819	.425	.596	.597	.999
3. Adm3	.71	.77		<.001	<.001	<.001	<.001	<.001	.747	.366	.730	.304	<.001	.003	<.001	.007	.398	.105	.317	.840	.368	.936	.767	.805
4. Adm4	.66	.77	.80		<.001	<.001	<.001	<.001	.784	.868	.621	.763	<.001	.044	.022	.055	.479	.152	.666	.884	.478	.854	.834	.801
5. Riv1	.35	.30	.31	.32		<.001	<.001	<.001	.163	.034	.001	.086	.001	.006	.045	.198	.713	.236	.761	.176	.002	.001	.001	.005
6. Riv2	.26	.42	.37	.41	.69		<.001	<.001	.285	.022	.001	.080	.002	<.001	.006	.019	.981	.362	.365	.797	.004	<.001	.004	.003
7. Riv3	.27	.37	.42	.41	.67	.75		<.001	.070	.051	<.001	.004	.008	.002	.030	.103	.408	.266	.624	.277	.081	.020	.002	.016
8. Riv4	.24	.34	.35	.44	.60	.68	.72		.569	.334	.002	.011	<.001	.004	.018	.022	.593	.354	.839	.631	.164	.051	.008	.011
9. App1	.04	-.01	-.01	-.01	-.05	-.04	-.08	-.03		<.001	<.001	<.001	<.001	<.001	<.001	<.001	.001	.024	<.001	.068	<.001	<.001	<.001	<.001
10. App2	-.02	-.04	-.04	-.01	-.09	-.09	-.09	-.05	.63		<.001	<.001	<.001	<.001	<.001	<.001	.636	.007	<.001	.006	<.001	<.001	<.001	<.001
11. App3	<.00	-.07	-.02	-.03	-.15	-.16	-.17	-.16	.59	.69		<.001	<.001	<.001	<.001	<.001	.657	.097	.001	.254	<.001	<.001	<.001	<.001
12. App4	-.04	-.02	-.06	-.01	-.09	-.09	-.15	-.12	.60	.66	.77		<.001	<.001	<.001	<.001	.200	.020	.007	.054	<.001	<.001	<.001	<.001
13. Con1	.15	.20	.21	.17	.11	.13	.12	.17	-.23	-.27	-.21	-.19		<.001	<.001	<.001	<.001	<.001	<.001	<.001	.018	.025	.101	.368
14. Con2	.05	.13	.14	.10	.11	.15	.14	.15	-.27	-.33	-.21	-.20	.73		<.001	<.001	<.001	<.001	<.001	<.001	.197	.001	.337	.198
15. Con3	.11	.17	.16	.12	.09	.13	.10	.13	-.28	-.26	-.31	-.31	.69	.71		<.001	<.001	<.001	<.001	<.001	.513	.031	.006	.013
16. Con4	.10	.10	.15	.09	.06	.12	.09	.11	-.23	-.24	-.24	-.31	.66	.68	.69		<.001	<.001	<.001	<.001	.502	.208	.002	.003
17. Dom1	.06	.06	.04	.03	.01	<.00	.04	.03	-.11	-.02	-.02	-.06	.28	.25	.27	.27		<.001	<.001	<.001	.136	.561	.340	.762
18. Dom2	.04	.09	.08	.07	.05	.04	.05	.05	-.09	-.11	-.08	-.12	.24	.34	.23	.31	.63		<.001	<.001	.452	.913	.739	.459
19. Dom3	-.01	.10	.05	.02	-.01	.04	.02	.01	-.21	-.19	-.15	-.15	.32	.38	.38	.29	.59	.68		<.001	.927	.994	.686	.385
20. Dom4	-.01	.01	-.01	.01	-.07	-.01	-.06	-.02	-.09	-.14	-.06	-.10	.26	.31	.29	.35	.55	.59	.65		.386	.100	.434	.817
21. Int1	.03	.03	.04	.03	-.11	-.12	-.08	-.07	.45	.38	.37	.43	-.08	-.05	-.03	-.03	-.05	-.03	<.00	-.04		<.001	<.001	<.001
22. Int2	.01	.02	<.00	.01	-.14	-.16	-.11	-.10	.42	.53	.39	.45	-.09	-.14	-.10	-.06	.02	<.00	<.00	-.08	.71		<.001	<.001
23. Int3	-.04	-.03	-.01	-.01	-.16	-.14	-.14	-.14	.41	.48	.58	.56	-.08	-.05	-.13	-.16	.04	.02	.02	-.04	.65	.70		<.001
24. Int4	-.03	<.00	-.01	.01	-.14	-.15	-.13	-.13	.36	.45	.47	.61	-.04	-.07	-.13	-.15	.02	-.04	-.05	.01	.61	.68	.78	

Note. Adm = Admiration; Riv = Rivalry; App = Appreciation; Con = Conflict; Dom = Dominance; Int = Intimacy. Below the diagonal correlations, above the diagonal uncorrected *p*-values are depicted.

Table S4

Longitudinal Measurement Invariance Testing of Latent Variables

Level of measurement invariance	Latent variables					
	Admiration	Rivalry	Intimacy	Appreciation	Conflict	Dominance
Configural						
χ^2 (*df*)	67.94 (30)	34.68 (30)	—	—	—	—
CFI	.988	.998	—	—	—	—
RMSEA	.039	.014	—	—	—	—
Metric						
χ^2 (*df*)	73.87 (36)	49.76 (36)	7.55 (6)	2.70 (6)	2.04 (6)	7.94 (6)
CFI	.988 (.000)	.993 (.005)	.999	1.00	1.00	.998
RMSEA	.036 (.003)	.021 (.007)	.018	.000	.000	.020
$\Delta\chi^2$ (Δdf), *p*	5.46 (6) .486	15.17 (6) .019	—	—	—	—
Scalar						
χ^2 (*df*)	95.31 (42)	157.83 (42)	13.78 (9)	5.95 (9)	9.26 (9)	10.66 (9)
CFI	.983 (.005)	.942 (.051)	.998 (.001)	1.00 (.000)	1.00 (.000)	.998 (.000)
RMSEA	.039 (.003)	.058 (.037)	.025 (.0.07)	.000 (.000)	.006 (.006)	.015 (.005)
$\Delta\chi^2$ (Δdf), *p*	21.89 (6) .001	146.59 (6) <.001	6.61 (3) .085	3.50 (3) .320	7.46 (3) .058	2.63 (3) .453
Partial Scalar						
χ^2 (*df*)	—	55.01 (39)	—	—	—	—
CFI	—	.992 (.001)	—	—	—	—
RMSEA	—	.022 (.001)	—	—	—	—
$\Delta\chi^2$ (Δdf), *p*	—	5.43 (3) .142	—	—	—	—

Note. CFI = comparative fit index; RMSEA = root mean square error of approximation. Partial scalar models were compared to metric models. If not indicated otherwise values in brackets show the respective deltas (Δ).

Table S5

Model Fits Random Intercepts Cross-Lagged Panel Models

		CFI	RMSEA	RMSEA 90% CI	SRMR	χ^2	p
Appreciation	Adm	.982	.055	.041, .071	.055	60.42	<.001
	Riv	.986	.047	.032, .063	.044	48.25	<.001
Conflict	Adm	.986	.051	.036, .067	.048	54.24	<.001
	Riv	.996	.025	.000, .043	.031	25.57	.083
Dominance	Adm	.986	.047	.031, .063	.047	47.84	<.001
	Riv	.994	.030	.010, .048	.036	29.92	<.001
Intimacy	Adm	.982	.058	.043, .073	.052	63.92	<.001
	Riv	.988	.044	.029, .060	.040	44.70	<.001

Note. Adm = Admiration, Riv = Rivalry; CI = Confidence Interval

4.   Part 4: General Discussion

The aim of the current dissertation was to deepen the understanding of the effects of personality traits on social relationships. Narcissism, as an antagonistic trait, was used here as a representative for personality traits that potentially have a negative effect on the perceived quality of social relationships. Friendships were chosen as one example of social relationships, which for many are the closest and most intimate relationships besides romantic relationships (Berscheid et al., 1989), and ultimately fulfill the need for relatedness and belonging. Friendship maintenance was aimed to represent a stage of the friendship process, which we assumed to be particularly relevant with regard to narcissism (Maaß et al., 2018; see also Leckelt et al., 2020) and has been underrepresented in previous research.

4.1.   Summary of the Findings

Two studies were conducted to investigate the interaction of narcissism and friendship quality in long-term friendships. While in Study 1 a dyadic perspective was taken, Study 2 enriched previous work with a longitudinal approach. The main findings of both studies are outlined in the following.

In Study 1, we focused on the perception of friendship quality differentiating between dyads of friends which scored either low, medium, or high on the three narcissism aspects, or differed in their respective score (i.e., one scoring low, the other scoring high). With regard to antagonistic narcissism in particular the friendship quality was perceived to be lower in dyads were both friends scored high on narcissism, compared to dyads with medium or low scores. Across the narcissism aspects, dyads with higher narcissism scores perceived more conflicts. Overall, these findings were in line with our assumption that maintenance of a friendship for two individuals with high narcissism scores comes at the price of relatively low friendship quality. These results can be interpreted in favor of the assumption of tolerance for one's own traits in a friend, as dyads with high narcissism scores seemed to maintain their friendships even though they perceived the quality of their friendships to be comparatively low. Thus, based on the evidence of Study 1, the answer is yes to the initial question of whether the friendship quality differs depending on the dyadic narcissism levels of two friends. Especially within dyads with high levels of

antagonistic narcissism compared to dyads with lower levels, different indicators of friendship quality have been perceived as lower.

In Study 2, we investigated the longitudinal, reciprocal associations between narcissism and friendship quality. Generally, antagonistic narcissism was negatively correlated with intimacy and appreciation, and positively with conflict. The latter also applied for agentic narcissism. Within-person differences were observed by examining the influences of deviations from the average in agentic and antagonistic narcissism, respectively, on deviations from the average in the four perceived friendship quality indicators and vice versa using RI-CLPMs. Individuals who reported lower scores than usual in agentic and antagonistic narcissism experienced subsequent increases in perceived appreciation, those with lower scores in appreciation experienced subsequent increases in antagonistic narcissism. Thus, feeling less valued and appreciated than usual apparently led to more self-protective behavior and higher than usual antagonistic narcissism led in turn to less feelings of being valued and appreciated than usual. For intimacy, conflict, and dominance no such effects were found. The question whether the subsequent perception of friendship quality changes depending on an individuals' level of narcissism and vice versa could be answered with a restricted yes, as it is dependent upon the friendship quality aspect which is examined. Results led us to the assumption that processes of relationship formation (e.g., Leckelt et al., 2020; Leckelt et al., 2015) to some extend recur in the phase of friendship maintenance.

Results of both studies indicated that the differentiation of the three narcissism aspects tends to be useful in the setting of long-term friendships. Similar to acquaintance and short-term contexts, high antagonistic narcissism was found to have the most (negative) impact on perceived friendship quality. The results also show that it is worth to observe different indicators of relationship quality instead of relationship satisfaction as a single measure of relationship functioning (see also 1.3.2.). Generally, the findings contribute to the literature on narcissism and social relationships by addressing the phase of friendship maintenance in which initial problems that potentially occurred due to narcissistic behavior should have been overcome or patterns of dealing with onerous behaviors should have been found. This dissertation demonstrates that negative effects of (antagonistic) narcissism still tend to apply in the maintenance phase of friendships.

4.2.   Theoretical and Practical Implications

To understand narcissism as a construct, structural analyses (e.g., Crowe et al., 2019; Wehner, Ziegler, et al., 2021) as well as the examination of construct validity (e.g., Back et al., 2013; Wehner, Maaß, et al., 2021) are crucial. In addition to that, antecedents and consequences of narcissism are important to consider. As outlined earlier (see 1.4.) social relationships are a fruitful domain in this regard. With the current work, I was able to extend previous findings on long-term relationships from romantic relationships (e.g., Wurst et al., 2017) to friendships. In the following, I will reflect on the implications of the current dissertation for (1) the dimensionality of both narcissism and friendship quality, (2) the informational value for previous models, (3) the development of the narcissism friendship quality association across the life span, and (4) in a practical sense.

4.2.1.   Dimensionality of the Constructs

The current work emphasizes the need to separate narcissism into three unique aspects when studying friendship quality in long-term friendships. This detailed assessment of narcissism at the three-folded aspect level allowed to examine differential associations with several aspects of relationship quality. Neglecting the narrower level would blur the three different narcissism aspects' actual influences that drive associations to potential outcomes, here friendship quality. Generally, it was shown that mainly antagonistic narcissism but also neurotic narcissism tend to promote the long-term maladaptiveness of narcissism (see 4.1.).

However, the question arises whether single individuals show behaviors of all three narcissism aspects to a similar extend or whether some individuals score high primarily on one of the aspects, and show little behavior related to the other aspects. In other words, to better understand narcissism as a construct, it would be valuable to know how the different narcissism aspects are combined within individuals (see also Back, 2018). An indirectly underlying assumption of much previous research (e.g., Czarna et al., 2016; Leckelt et al., 2020; Leckelt et al., 2015) is that those individuals which tend to be liked because of agentic behaviors are the same who are later disliked and have problems in their relationships because of their antagonistic or neurotic behaviors. As already pointed out in the introduction (1.1.3.), the correlations between the three narcissism aspects have been found to vary typically between $r = .30$ and .50 (e.g., Crowe et al., 2019; Leckelt et al., 2018), which could be interpreted in favor of the

named assumption. Recent research, however, found that associations between grandiose and vulnerable narcissism increase at higher levels of grandiose narcissism (Jauk & Kaufman, 2018; Jauk et al., 2021), pointing to a non-linear association. With regard to the three aspects of narcissism, correlations indicated that at lower levels of grandiose narcissism the agentic part is more prominent, at higher levels this changes and the antagonistic part takes on a greater role. This is similar to findings of latent class analyses, in which four subgroups were found, which comprised individuals (1) with low narcissism, (2) with moderate narcissism characterized by agentic narcissism, (3) with moderate narcissism characterized by agentic and antagonistic narcissism, and (4) with high narcissism (Wetzel et al., 2016). These results have led to the interpretation of agentic narcissism working as a default strategy. Antagonistic narcissism, on the other hand, was interpreted as only coming to show when the agentic goal achievement has not been successful, as there was no group which was characterized by only antagonistic narcissism (Back, 2018). Taking a closer look at non-linear associations or subgroups of narcissism in relation to friendship quality would be an interesting future endeavor, also regarding the current research, in particular concerning Study 1. The effects we found, indicating lower perceived friendship quality in dyads with higher narcissism levels, could partly be explained by shared variance of the narcissism aspects in the same people. That means, for example, that those individuals that drove the negative relation of high dyadic antagonistic narcissism and low appreciation may be the same that were pivotal for the similar relation of neurotic narcissism and appreciation. Other dyads, with higher agentic narcissism, could generally perceive more appreciation, which would explain why we found no substantial effect regarding agentic narcissism and appreciation.

Similar to the dimensionality of narcissism, the dimensionality of friendship quality is worth to reflect upon. Relationship satisfaction is often used as an indicator for the perceived quality of a relationship and is not further differentiated. In line with the assumptions of the friendship process model (Fehr, 2012; see also 1.3.1.), however, the different aspects of friendship quality should be reflected in the operationalization of the construct. An example of this idea in the context of friendship maintenance is the measure provided by Oswald et al. (2004). The shorter and also negative quality assessing pairfam version of the NRI (Walper et al., 2010) that was used in the current dissertation also reflected the usefulness of a more differentiated measure: While, for

example, conflict showed relatively consistent findings across all narcissism aspects, findings for intimacy differed between agentic, antagonistic, and neurotic narcissism (the latter was only assessed in and supported by Study 1). Further, the Brunswik symmetry principal recommends to examine variables at the same level of generalization (Wittmann, 1988). This is also in line with the argumentation by Mund and Neyer (2021; Figure 2) who stressed that associations between personality facets and relationship characteristics are more likely to be detected than, for example, the relations of relationship aspects and broad personality traits. Both, narcissism and friendship quality aspects as used in the current dissertation, can be considered to represent a medium and therefore similar level of aggregation. Therefore, it can be assumed that the associations found between narcissism and friendship quality were not diminished by different levels of symmetry.

Taken together, findings of both studies suggest that the use of dimensional measures for narcissism and friendship quality are useful for the understanding of friendship maintenance in individuals with high narcissism.

4.2.2. Informing Existing Models of Narcissism

In the following, I will use the current findings to inform the models I have described in the introduction (1.1.4. and 1.1.5.) regarding long-term friendships. Thereby, I will focus on those models for which I consider the information most valuable.

The NARC (Back et al., 2013) differentiates two central strategies: The self-promotional strategy, in which narcissistic admiration is promoted through assertive self-enhancement and social potency, and the self-defense strategy, in which narcissistic rivalry is promoted through antagonistic self-protection and social conflict. While there was no evidence in favor of the self-promotional strategy, findings from the current dissertation (Study 2) provide some support for the self-defense strategy. The latter was supported by the reciprocal associations of antagonistic narcissism and appreciation. For the former, one would have assumed social potency (for example higher appreciation) to lead to self-promotion and ultimately higher assertive narcissism, which in turn should have led to more social potency and ego boost (see also the discussion of Study 2). To finally evaluate the usefulness of the NARC in the phase of friendship maintenance, a more direct test of the model including concrete relevant behavior would be needed.

The ASOL (Paulhus, 2001) states that individuals with high narcissism tend to have asymmetrical relationships regarding their evaluation of the self and others. The present findings challenge this assumption, as results of Study 1 indicate that individuals tend to be friends with individuals with similar narcissism levels and are at least able to maintain their relationships over a period of at a minimum two years. Only a very small number of dyads in the sample had mixed narcissism levels. However, the tolerance of trait-levels similar to one's own does not necessarily mean they are evaluated positively: Friendships seem to be maintained at high dyadic narcissism levels, but at the cost of a relatively low relationship quality. Lamkin et al. (2018) made a similar argument: High scores in antagonism in their study did not actually lead to liking antagonistic behaviors in others, but to unliking them less compared to individuals with lower antagonism scores.

The present work further challenges the assumption postulated within the contextual reinforcement model (Campbell & Campbell, 2009) that individuals with high narcissism tend to return to the dynamics of the phase of relationship formation where their behavioral tendencies are most beneficial. Study 1 showed that individuals with high narcissism rather seem to accept that they have more conflicts, less intimacy, and less appreciation in their long-term friendships compared to others with lower narcissism. It should be noted, however, that the model focused on grandiose and agentic narcissism, whereas we found the strongest evidence against the model's assumptions for antagonistic and neurotic narcissism. A recent study by Czarna et al. (2022) on romantic relationships also questioned the positive tendencies that narcissistic traits can have during relationship formation. They found that individuals with high grandiose narcissism overrate their partners across relationship stages, while individuals with low narcissism tend to overrate their partners only during relationship formation but not at later stages.

Overall, existing models rather seem to reflect the formation phase of relationships than the phase of friendship maintenance. The contextual reinforcement model, for example, does not include the natural drift to the enduring zone probably taking place over time. According to the model, the enduring zone leads to high costs for both the individual with high narcissism and their social partner. A return to the dynamics of the beginning will not (always) be possible. In the long run, following the model, this would mean that individuals with high narcissism tend to have no close

social relationships at all. An extension of the model could take the general benefits of long-term relationships, e.g., well-being (Chopik, 2017), into account, which may outweigh part of the costs arising due to narcissistic behaviors. The current work would also suggest that the different aspects of narcissism should be examined more closely, as their association with perceived relationship quality differs, implying different costs for the different aspects.

4.2.3.   Potential Lifespan Changes in the Association of Narcissism and Friendship Quality

After a peak in emerging adulthood, where at least agentic narcissism is somewhat adaptive (Hill & Roberts, 2018), both grandiose and vulnerable narcissism tend to decline with age (Chopik & Grimm, 2019; Wetzel et al., 2020). It is likely that this decline affects the association with friendship quality. It could be assumed that across the adult lifespan the negative effects of antagonistic and neurotic narcissism on friendships decrease and that friendship quality increases, with overall more positive and less negative perceptions. However, not only does narcissism change across the lifespan, but so do friendships. The number of friendships was found to decline with age (Wrzus et al., 2013), while the quality of remaining friendships in older age tends to be higher (Pinquart & Sörensen, 2000), which is in line with socioemotional selectivity theory (Carstensen et al., 1999), i.e., becoming more selective and investing more in emotional needs with increasing age. In early adulthood (age 19 to 30), by contrast, friendship quality was found to decline[7] (Langheit & Poulin, 2022), which may be related to more engagement in romantic relationships, career, and family planning (see Wehner et al., 2022 for a similar reasoning) and less time being invested into friendships. Based on the named findings, the development of friendship quality may be u-shaped (see Nicolaisen & Thorsen, 2017 for cross-sectional evidence), which equals the association of age with happiness and well-being at levels of higher friendship importance (Chopik, 2017). These developments of friendships may likewise affect the association of friendship quality and narcissism. When individuals must decide which friendships they want to prioritize due to time restrictions, less resources or older age, they will likely choose those friendships which provide the most benefits or resources for them. Thus, the tolerance for (antagonistic and neurotic) narcissistic

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[7] Most indicators in the study by Langheit and Poulin declined, yet increasingly less conflicts were perceived.

behavior may decrease with age, potentially leading to less friendship quality in the respective friendships maintained, or to friendship dissolution. This may leave individuals with high narcissism with little to no friends.

However, there might be interindividual differences. According to a within-person self-regulatory model which Back (2018) outlined in a recent book chapter, agentic behavior is seen as a default strategy and antagonistic behavior as a backup strategy if the agentic behavior does not lead to the desired admiration (see also 4.2.1.). Neurotic behavior seems to be the last option, when narcissistic esteem cannot be restored through antagonistic behavior. Here, the TESSERA framework (Wrzus & Roberts, 2017; see also discussion section of Study 2) would suggest that repeatedly shown behavior would lead to long-term trait changes, i.e., the more an individual is unsuccessful with their agentic narcissistic behavior, the more likely are increases in antagonistic and neurotic narcissism. Therefore, individuals with high agentic narcissism may be successful in gaining the desired admiration and likewise in keeping their friendships at a level of relatively high quality, hence others may become more antagonistically and / or neurotically narcissistic leading to low friendship quality or friendship dissolution. Thus, integrating the developmental perspective could add an important contribution to future research on narcissism and social relationships in general and friendships in particular.

4.2.4. Practical Implications

When narcissism is studied in long-term friendships, the aspects of antagonistic (Study 1, Study 2) and neurotic narcissism (Study 1) seem to be particularly relevant. To test this directly, it would be informative to observe situations in which antagonistic or neurotic narcissistic behaviors meet the situational demands (Tett & Guterman, 2000). For example, in a laboratory setting the experience of a conflictual situation with a good friend triggering aggression (i.e., antagonistic narcissism) or distrust (i.e., neurotic narcissism) could elicit direct effects of narcissistic behaviors on the perception of later friendship quality. While newly acquainted individuals would potentially show more agentic behaviors such as problem-focused behaviors (see Study 5 in Back et al., 2013), in long-term friendships more revenge-oriented, i.e., antagonistic behaviors, may be shown. The ego threat, as postulated by the NARC, may only occur in social relationships in which at least some self-disclosure has already taken place (but see Horton & Sedikides, 2009). When this idea is transferred to evolving friendships,

provoking a conflict or any other form of potential ego-threat could show how someone potentially possessing narcissistic traits reacts. Thus, one could deduct in which direction the relationship could potentially develop further and evaluate whether the budding friendship is worth to be maintained.

Regarding the need to belong, many (antagonistic and neurotic) narcissistic behaviors are obstructive, and the positive outcomes of belonging are potentially missing for an individual with high narcissism. Therefore, one could assume that it would be desirable for an individual high in narcissism to behave less narcissistic. Previous findings, however, show that people on average rather want to increase in their (agentic) narcissism (Hudson, 2022). When looking at the item content it seems plausible that it is appealing, for example, to be comfortable "being the center of attention". In the same study, trait agentic narcissism was unrelated to the goal to change in agentic narcissism and Hudson concluded that individuals higher in agentic narcissism do not particularly desire to decrease agentic narcissism. As all narcissism aspects are related to disagreeableness (e.g., Crowe et al., 2019), a change in agreeableness could also lead to a decrease in narcissism and possibly have a positive effect on social relationships (e.g., Asendorpf & Wilpers, 1998). Yet agentic narcissism was also unrelated to the goal of changing agreeableness. However, among individuals who successfully participated in an intervention aiming to increase agreeableness, agentic narcissism tended to decline (Hudson, 2022). Thus, if individuals with high agentic narcissism have a problem satisfying their basic need for belonging, they do not seem to recognize it or other needs are experienced as more prominent than their need to belong. As the findings of the current work suggest, with regard to friendships antagonistic and neurotic narcissism might be the more interesting and influential aspects regarding potential change goals, which should be further explored in future research. In general, the usefulness of the agreeableness intervention for agentic narcissism shows that change in narcissism is possible, which may be transferable to the antagonistic and neurotic aspects. Ultimately, this could benefit well-being, personal growth, and the quality of close social relationships, such as friendships (see also 4.3.3.).

4.3. Strengths, Limitations, and Future Directions

In the following I will outline what I consider to be the major strengths and limitations of this dissertation (4.3.1. and 4.3.2.), before discussing ideas and potential impulses for future research (4.3.3.) that go beyond those already derived (4.2.).

4.3.1. Assessment and Sample

A major strength of this work is that data was assessed in a real-life interaction setting. Existing friendships, which lasted on average for 9.23 years (SD = 7.11) and for at least two years, were observed. Most individuals (88.3%) reported on the relationship quality to their best or a very close friend. In this way, I could ensure to assess the maintenance phase of the friendships and to get information on a friendship that is most likely significant and meaningful to the participants. I considered the latter to be particularly important since I assumed effects of a single friendship on an individuals' personality to be relatively small (see also Harris & Vazire, 2016). That is, other friendships or close relationships could potentially compensate for or overlay effects of the friendship quality (of the friendship that was observed here) on narcissism. In addition, data from both friends of a dyad were assessed for Study 1. This allowed to examine the dependency of friendship quality from dyadic narcissism levels. For Study 2, longitudinal data were assessed, which in turn allowed me to examine how narcissism and friendship quality might shape each other over time. However, I solely relied on self-reports, which on the one hand allow for valuable insights into the inner states and perceptions of people, but on the other hand tend to be more distorted by ego-protective biases than observer ratings (e.g., Vazire, 2010). An assessment of ego-protective biases would be a relevant addition to the current work because of the link of narcissism and ego-protection (Hepper et al., 2010). Although a major advantage of the studies lies in the external validity of our findings, the correlational nature of the data prohibits causal inference (e.g., Raudenbush, 2001). Future research should, thus, replicate the results using experimental designs that allow to come closer to causal effects.

The sample size can be considered a strength of the two studies, although the attrition in Study 2 was relatively high, with slightly more than 50 percent continuing to participate until the final assessment nine months after the initial assessment. This is comparable to the dropout rate in other unpaid studies with a similar time frame, i.e. about 40 percent dropout after 6 to 7 months (Kanemasa et al., 2022; Oleksy et al., 2022).

The samples were convenience samples with about two thirds being students; the majority identified as female. We have already discussed this in more detail in the limitation sections of both studies, so that I only want to focus on the generalizability of the results which may be limited for at least two reasons: (1) Gender differences in agentic and antagonistic (but not neurotic) narcissism have been shown repeatedly with men scoring higher than women (Grijalva et al., 2015; Leckelt et al., 2018), and (2) friendship maintenance behaviors have likewise been shown to differ between genders (Hall, 2011; Oswald et al., 2004). For example, women tend to show more support and intimacy in their same-sex friendships than men. Thus, future research on friendship quality should aim for more balanced samples in terms of gender and differentiate between different gender compositions within friendships.

4.3.2. Methodological Approach

In the first study, ANOVAs and corresponding post-hoc tests were used to identify potential differences in friendship quality between groups of dyads with high, medium, low, or mixed levels of narcissism. An independent, yet comparable sample in terms of gender, age, and nationality was used to assign participants to the three groups. A potential critique of this approach is the loss of variance in the narcissism aspects due to the grouping by changing the level of measurement from interval to ordinal. We still found effects in the expected direction of lower friendship quality in dyads with higher dyadic narcissism levels. This implies that the reduction in variance did not erase potential effects, even though they may be reduced. Furthermore, the groups of dyads with mixed narcissism levels were quite small for all three aspects of narcissism. Although this limits the informational value for this group, the finding could also be interpreted in the sense that only few people manage to maintain a friendship with different narcissism levels, which would favor the idea that a certain tolerance of maladaptive traits in long-term relationships is needed to keep them alive (e.g., Kay, 2021; Lyons & Blanchard, 2016).

In the second study, we analyzed the temporal associations of agentic and antagonistic narcissism with the four friendship quality aspects at the within-person level using RI-CLPMs. Those models have been shown to overcome some of the problems of the often used cross-lagged panel models, which arise mainly as the latter do not allow to disentangle within- and between-person effects (e.g., Hamaker et al., 2015). RI-CLPM instead allows for this separation through the inclusion of a random

intercept which partials out between-person variance. At the same time, a limitation of the RI-CLPM can be seen in the missing information on the between-person level regarding its consequences (Orth et al., 2020). A prospective between-person effect is not testable. It was the aim of Study 2 to investigate effects at the within-person level and we therefore considered the RI-CLPM an appropriate model. However, it would still be interesting to look at the effects in more detail on the between-person level. Initial findings from Study 2, based on bivariate correlations, showed significant positive associations of assertive and antagonistic narcissism with conflict, and negative associations of antagonistic narcissism with intimacy and appreciation. Expanding these findings with models that can also depict reciprocal associations at the between-person level could be fruitful. For example, bivariate latent-change score models (BLSCM; McArdle, 2001; McArdle, 2009) allow to examine effects of change at the between-person level to answer the question of how the narcissism aspects may affect change in friendship quality and vice versa. A substantial effect in a BLCSM might show that individuals with high antagonistic narcissism, for example, experience subsequent increases in conflict or decreases in intimacy compared to individuals with lower scores.

4.3.3. Future Directions

As outlined by Back and Vazire (2015), most studies focusing on social consequences of personality have observed new acquaintance settings or romantic relationships. A few years later, their claim to observe a greater diversity of relationships is still valid, with adult friendships being one of the under-researched relationships. Likewise, studies which compare effects of personality in different relationship types could potentially further deepen the understanding of, for example, compensational effects of different relationships. When focusing on friendships, this could also be approached by comparing friendships of varying closeness to each other as best friends have been shown to perceive their friendship quality as higher than close and casual friends, and close friends to perceive their friendship quality as higher than casual friends (Oswald et al., 2004). Beyond that, it would also be insightful to observe different friendships of one target person with different levels of closeness. Again, it might be observable whether one friendship could compensate for the lack of intimacy in another friendship. This might explain why friendships of individuals with mixed narcissism levels are maintained – maybe even at a level of relatively high

friendship quality. In the light of the current findings, however, I would assume that relationship quality for individuals with high antagonistic and neurotic narcissism (and their interaction partners) is generally low – yet, this still needs to be tested.

With regard to the broader motivational theories on the importance of relatedness and belonging (see 1.2.1. and 1.2.2.) for self-development, growth, and well-being, I consider it important for future research to observe the assumed underlying psychological processes in the light of narcissism. The current findings indicate that narcissism is associated with lower perceived friendship quality. This, in turn, could thwart positive outcomes of a fulfilled need for relatedness or even evoke mental health problems (e.g., Parr et al., 2020). While previous research showed that individuals with high (grandiose) narcissism experience difficulties in fulfilling their need to belong even though their need to belong may be relatively low in general (Campbell, 1999; Campbell & Foster, 2002), this has not yet been examined directly. Interestingly, individuals with higher grandiose narcissism generally act more aggressive than those with lower narcissism, but not when they feel socially accepted (Twenge & Campbell, 2003). This indicates that individuals with high narcissism may have a similar need for relatedness as individuals with lower narcissism, however, may struggle to fulfill this need, possibly in favor of another, conflicting need such as self-enhancement. Alternatively, this finding could be understood as evidence that, despite perceiving a low need to belong, individuals with high narcissism still need committed and caring relationships to maintain their well-being (see Elliot & Thrash, 2001 for a similar reasoning). A connecting element of the need to belong and narcissism could also be the sociometer theory (Leary, 2005; Leary & Baumeister, 2000), which highlights the role of self-esteem as an internal indicator of one's status of belonging. The authors assumed that self-esteem is essentially based on belonging. Underscoring the need to differentiate between the three aspects of narcissism, self-esteem has been found to be positively related to agentic narcissism, $r \sim .30$, and negatively to antagonistic, $r \sim -.10$, and neurotic narcissism, $r \sim -.60$ (Crowe et al., 2019). The strong connection of the need for relatedness with the need for competence and autonomy proposed in the self-determination theory (Deci & Ryan, 1991) shows that more research in this area could help educators, psychotherapists, and managers alike, who deal with narcissistic individuals, as motivation is critical in many areas of life.

Across both studies, the strongest and most consistent associations of narcissism and friendship quality aspects were found for conflict. Therefore, I consider it important to take a closer look at conflicts in friendships of individuals with high narcissism. Wrzus et al. (2017) likewise claimed that effects of personality on conflicts (amongst other indicators) within friendships need further investigation. Previous studies which have observed narcissism and conflicts either used few items to assess conflicts (Back et al., 2013; Wurst et al., 2017), observed conflicts in the whole social network of individuals (McCullough et al., 2003), were based on hypothetical scenarios (Back et al., 2013), or observed conflicts in the context of work (Lynch et al., 2021; Meurs et al., 2013). A detailed assessment of conflicts has not yet been approached in the context of narcissism: It would be interesting to understand which kind of conflicts appear (conflict content), how they are treated (conflict management and conflict solving), how conflict management affects other aspects of relationship quality (e.g., intimacy), and how the different narcissism aspects affect conflict management. While Study 2 of this work is the first study that observed the longitudinal associations of narcissism and conflict within friendships (see Wurst et al., 2017 for an assessment across 4 weeks in romantic relationships), more and closer assessments, such as a daily diary or an experience sampling study, would allow to gain a better understanding of the influence of narcissism on conflicts and vice versa. Conceptually, the study by Campbell et al. (2005), who observed conflicts in romantic relationships using a daily diary approach, could serve as a blue print. The authors asked participants whether they had experienced a conflict or negative event with their partner and, when a conflict had occurred, asked for details on escalation of the conflict, perceived hurtfulness, positive behaviors towards the other, and potential long-term implications. Also different conflict solving styles (such as voice or neglect) which have been observed in previous research on friendships (Berry et al., 2000; Oswald & Clark, 2006) would be interesting to observe regarding the different narcissism aspects.

More generally, current results show the usefulness to combine research on social relationships with research on personality. At this intersection, the similarity of personality traits between individuals in close relationships has been observed in some depth (e.g., Maaß et al., 2016; Montoya et al., 2008; van Scheppingen et al., 2019; Watson et al., 2000), while a stronger emphasis should be placed on different aspects of relationship quality and personality traits at the facet level (see also 4.2.1.). In terms of

Big Five personality traits, this has been addressed in a few studies (Deventer et al., 2018; Mund & Neyer, 2014) but often either personality facets and general relationship quality (e.g., Noftle & Shaver, 2006; Shaver & Brennan, 1992) or broad personality traits and specific relationship aspects have been examined (e.g., Neyer & Lehnart, 2007; White et al., 2004). Especially effects of relationship quality on personality have rarely been studied (see also Mund & Neyer, 2021). With regard to narcissism, the general association with relationship quality has been claimed to be understudied (Gerlach et al., 2018) and is particularly scarce at the level of different relationship quality aspects (see Vrabel et al., 2020; Vrabel et al., 2021 for exeptions). As such, the current studies can also be understood as a starting point within this broader field of research.

4.4.   Conclusion

This dissertation contributes to the understanding of the interplay of social relationships and personality traits. In particular, I examined the quality of long-term friendships in the light of three aspects of narcissism, a construct that is simultaneously highly popular and controversial in psychology and among the general public. The current work complements previous research in several ways: First, it demonstrated the usefulness of a dimensional assessment of narcissism and friendship quality. Both constructs were observed at a medium level of generalization and the differential effects that I found seem to justify this approach: Antagonistic and neurotic narcissism showed more negative associations with friendship quality compared to agentic narcissism. All narcissism aspects were positively related to conflict, while differential effects were found for appreciation, intimacy, and dominance. Second, long-term friendships were observed to inform theoretical models that were mostly derived to predict outcomes in short-term contexts and expand these to long-term contexts. Third, potential changes of the association between narcissism and friendship quality across the lifespan were discussed. Forth, the focus on friendships extends previous findings on social relationships that were mainly related to romantic relationships. Overall, the negative impact of (antagonistic and neurotic) narcissism with regard to the perceived friendship quality seems to be an influential feature within friendships. At the individual level, this could restrict fulfillment of the need to belong and consequently affect well-being, health, and personal growth.

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This list contains the combined references from the thesis and the two studies.

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6. Selbstständigkeitserklärung

Hiermit erkläre ich, die Dissertation selbstständig und nur unter Verwendung der angegebenen Hilfen und Hilfsmittel angefertigt zu haben. Ich habe mich anderwärts nicht um einen Doktorgrad beworben und besitze keinen entsprechenden Doktorgrad. Ich erkläre, dass ich die Dissertation oder Teile davon nicht bereits bei einer anderen wissenschaftlichen Einrichtung eingereicht habe und dass sie dort weder angenommen noch abgelehnt wurde. Ich erkläre die Kenntnisnahme der dem Verfahren zugrunde liegenden Promotionsordnung der Lebenswissenschaftlichen Fakultät der Humboldt-Universität zu Berlin vom 5. März 2015. Weiterhin erkläre ich, dass keine Zusammenarbeit mit gewerblichen Promotionsbearbeiterinnen/ Promotionsberatern stattgefunden hat und dass die Grundsätze der Humboldt-Universität zu Berlin zur Sicherung guter wissenschaftlicher Praxis eingehalten wurden.

I hereby declare that I completed the doctoral thesis independently based on the stated resources and aids. I have not applied for a doctoral degree elsewhere and do not have a corresponding doctoral degree. I have not submitted the doctoral thesis, or parts of it, to another academic institution and the thesis has not been accepted or rejected. I declare that I have acknowledged the Doctoral Degree Regulations which underlie the procedure of the Faculty of Life Sciences of Humboldt-Universität zu Berlin, as amended on 5th March 2015. Furthermore, I declare that no collaboration with commercial doctoral degree supervisors took place, and that the principles of Humboldt-Universität zu Berlin for ensuring good academic practice were abided by.

Berlin, den 30. Juni 2022

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