UNIKASSEL
VERSITÄT

Masterarbeit

Institut für Psychologie
Universität Kassel
Fachbereich 01 Humanwissenschaften
Abteilung: Differentielle Psychologie

Exploring Attachment Styles and Relationship Satisfaction in Monogamous and Consensual Non-Monogamous Relationships

---

Vorgelegt von
Moritz Hofmann
Matrikelnummer: 35738916
moritz.hofmann@student.uni-kassel.de

Erstgutachter: Leon Wendt
Zweitgutachter: Prof. Dr. Johannes Zimmermann

Kassel, den 29.11.2023

Abstract

The traditional assumption in attachment theory, among therapists, and in society is that monogamous relationship agreements are necessary for secure attachments and high relationship satisfaction, whereas *consensually non-monogamous* (CNM) relationships are often viewed as a strategy for avoiding attachment. In line with a growing body of research challenging both assumptions, the present study explores the associations between the two common attachment styles (*anxious* and *avoidant*), relationship satisfaction and relationship exclusivity. Relationship exclusivity is operationalized on a continuous scale of consensual sexual and emotional exclusivity, ranging from monogamy to non-hierarchical polyamory. Using an online questionnaire, participants ($N_{subjects}$ = 497) provided information on up to four of their current and past relationships ($N_{observations}$ = 1,159). Results from four multilevel models showed that relationship satisfaction slightly decreased with relationship exclusivity (β = 0.06) and was negatively predicted by an avoidant attachment style (β = -0.12), whereas an anxious attachment style did not explain additional variance in satisfaction. Attachment styles and relationship exclusivity were not intercorrelated, and the association between exclusivity and satisfaction remained consistent across different levels of avoidant and anxious attachment styles. These findings suggest that individuals in less exclusive CNM relationships may have similar attachment patterns and can experience at least as much satisfaction as those in more exclusive (including monogamous) relationships. Limitations including targeted sampling, and future research directions such as longitudinal studies are discussed. This thesis may have practical relevance for couples therapists and those exploring varying degrees of relationship exclusivity.

Keywords: consensual non-monogamy, relationship exclusivity, attachment styles, relationship satisfaction, multilevel model

Acknowledgements

I would like to begin my thanks to Ann-Marlene Henning for her early personal encouragement in pursuing this thesis in a research field that deeply interests me. Then, I am very thankful to my primary supervisor, Leon Wendt, for his significant contribution in the design of the study and the development of the questionnaire. His responses were always quick and reliable, and his expertise and continuous support were invaluable in shaping this project. Additionally, I appreciate Prof. Dr. Johannes Zimmermann for his role as the second examiner and his background support.

Another crucial component of this work was the participant recruitment. Therefore, a big thank you goes to all the participants of the study and to those who assisted in disseminating the questionnaire. Further along, I appreciate the collegial and statistical advice from Felix Zimmer, Tobias Rosinski, and Gesa Graf, which substantially improved the quality of this work. I am also thankful for the valuable feedback towards the end of this project provided by Alexander Hagemann, Sophia Weißgerber and Ursa Grau. And a special thanks goes to Stefan Aull, Jonathan Clements, and Andy Gillert for their meticulous corrections and attention to detail.

On a personal note, I am deeply grateful to Janik Schäfer, Damaris Gartner, Eileen Vetter, Christiane Löffler, and especially Darja Trende, as well as others previously mentioned, for their unwavering support during the development of this work. Crafting this thesis was the most emotionally challenging period of my life so far, and their presence and encouragement was invaluable in helping me get through this. I also extend heartfelt thanks to my parents for their constant emotional and financial support throughout my entire studies.

In conclusion, I am grateful to myself for completing this degree and thesis. It has been a journey of personal growth and perseverance that I proudly reflect upon.

Table of Contents

List of Figures

List of Tables

Introduction

Researchers have observed an increasing diversity of exclusivity agreements in relationships beyond the traditional monogamous marriage in recent decades (Balzarini & Muise, 2020). These non-exclusive relationship forms are collectively referred to as *consensual non-monogamy* (CNM) (Scoats & Campbell, 2022). In these CNM relationships, individuals agree to allow sexuality and/or romantic love with more than two people at a time (Scoats & Campbell, 2022). Studies indicated that about one-fifth of North Americans have been involved in a CNM relationship (Haupert et al., 2016), while one-sixth of American singles are currently interested in being in a polyamorous relationship (Moors et al., 2021). Data from Europe suggest a similarly high level of interest (Gonin-Spahni et al., 2019; Rothmüller, 2021; Træen & Thuen, 2022). This trend has been recognized by dating apps like *OkCupid*, which added the "non-monogamous" option as a relationship orientation in 2014 (Moors, 2016).

At the same time, Western society is still dominated by so-called *mononormative* beliefs (Ferrer, 2018). For example, most people believe that for two people who "truly" love each other, all sexual and emotional needs should be completely satisfied, and therefore it is not possible to love more than one person at the same time (Leuona et al., 2021). Non-exclusive CNM relationships challenge this norm and are often marginalized and stigmatized in society and research (Balzarini & Muise, 2020; Conley et al., 2013; Moors et al., 2013). For instance, the majority of the American population thinks that people use non-monogamous relationship agreements as a strategy to avoid closeness and attachment, and that CNM couples are generally less satisfied than people in monogamous relationships (Conley et al., 2013; Moors et al., 2013).

Relationship and attachment research has been heavily influenced by mononormativity (Moors et al., 2015). Consequently, many CNM-interested individuals and professional couples

therapists are often challenged with questions of whether and how CNM relationships can be happy and provide secure attachment (Moors et al., 2015; Schechinger et al., 2018). Over the past decade however, a growing number of studies have compared relationships with different exclusivity agreements and thereby enabling a better understanding of CNM (Scoats & Campbell, 2022). The findings from these studies can be interpreted within the framework of relationship-relevant constructs such as Bowlby's attachment theory (1969), from which practical implications can be derived, as demonstrated in Fern's (2020) widely recognized book.

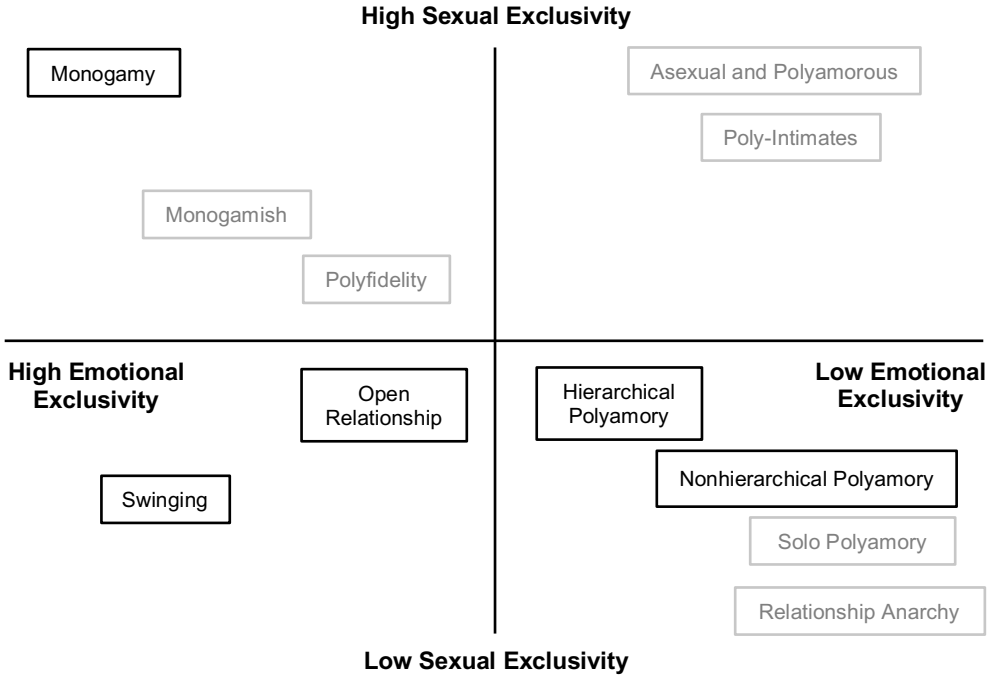
The present study summarizes relevant findings in the growing field of research on CNM, with a particular focus on attachment styles and relationship satisfaction in the context of CNM. Hypotheses derived from this review will be examined through an empirical cross-sectional study, designed to deepen our understanding of the connections between the degree of relationship exclusivity, attachment styles, and relationship satisfaction in romantic relationships.

Consensual Non-Monogamous Relationships

CNM (Consensual Non-Monogamy) is an umbrella term for many different types of non-exclusive relationship arrangements in romantic relationships. The most common categories include swinging, open relationships, hierarchical and non-hierarchical polyamory (Balzarini & Muise, 2020; Scoats & Campbell, 2022), whereby the boundaries between these categories are fluid (Grunt-Mejer & Campbell, 2016). According to Fern (2020), these and other CNM categories (which are not further discussed here) can be effectively mapped onto two axes of sexual and emotional exclusivity (see Figure 1).

Figure 1

Monogamy and Different Types of Nonmonogamy on Two Dimensions of Exclusivity



Note. This figure is adapted from Fern (2020, p. 110). The CNM categories not discussed in this paper (and that are less well-known) are grayed out.

The most exclusive CNM category is swinging, which typically involves an agreement between two individuals in an established romantic relationship to engage primarily in sexual interactions with others outside their relationship, often together with their partner (Harviainen & Frank, 2018). Slightly less exclusive are open relationships, in which partners allow each other to date other people without the presence of their partner, primarily for sexual closeness, while partners in a polyamorous relationship extend non-exclusivity to the emotional realm, allowing them to have multiple romantic relationships simultaneously (Barker & Langdridge, 2010). Polyamorous relationships can be structured according to a clear hierarchy, wherein a primary relationship establishes certain needs or agreements that take precedence over secondary or

tertiary relationships (Balzarini & Muise, 2020). Alternatively polyamorous relationships can be practiced non-hierarchically, so that the needs of all partners in the various romantic relationships are equally important, thus tending to prevent agreements between two individuals from taking precedence over another relationship (Balzarini & Muise, 2020).

According to Fern (2020), it is also important to note that exclusivity agreements can vary greatly even within the CNM categories described above. People enter non-monogamous relationships, just as they enter monogamous ones, for the same reasons: that is, to fulfill certain needs (Patrick et al., 2007). It seems that more and more individuals are considering adjusting the exclusivity agreement based on their current needs for autonomy and freedom on one hand, and security, comfort, and reliability on the other (Finkel et al., 2014; Mitchell et al., 2014). The goal remains to experience as much satisfaction as possible in romantic relationships (Butzer & Campbell, 2008), often leading people to question which agreements and what degree of exclusivity may best suit their needs and may lead to high relationship satisfaction (Flicker et al., 2021; Rubinsky, 2019).

Relationship Satisfaction in Monogamous and Consensual Non-Monogamous Relationships

In the mononormative general population, several studies suggest prejudices that individuals in CNM relationships are psychologically impaired, experience less overall well-being, and less relationship satisfaction (Conley et al., 2013; Rubin et al., 2014). Among others, Conley et al. (2013) reported that participants in a non-targeted survey rate the relationship satisfaction of a fictional monogamous couple on a six-point scale at an average of 4.82, and that of a hypothetical CNM couple at only 2.86 on average. The authors suggested that CNM relationships are not unfamiliar to but are also perceived as dysfunctional by large parts of the population, as well as in research and among therapists (Conley et al., 2013; Moors et al., 2013).

However, in their review, Rubel and Bogaert (2014) summarized that a majority of studies have found no difference between individuals in monogamous and non-monogamous relationships regarding relationship satisfaction or regarding various other psychological characteristics for general well-being, such as life satisfaction, depression, personal fulfillment, or mood stability. Contrary to the prejudices, individuals in CNM relationships even report higher sexual satisfaction (Conley et al., 2018), more trust in their partner, and less jealousy (Conley et al., 2017) compared to those in monogamous relationships. Examining different forms of CNM relationships in comparison to monogamous ones, researchers have found varying results: One study by (Bergstrand & Williams, 2000) reported that swingers indicate higher relationship satisfaction compared to a general national sample. In contrast, (Conley et al., 2017) found that while no significant difference between swingers and monogamous individuals was obtained, polyamorous individuals report significantly higher relationship quality than those in monogamous relationships.

Furthermore, some studies suggest that relationship satisfaction in CNM relationships depends on whether the relationships are labeled as primary, secondary, or non-hierarchical (Balzarini et al., 2019; Conley et al., 2013). Among primary partners, relationship satisfaction appears to be higher than among secondary ones (Conley et al., 2013), whereas individuals in multiple non-hierarchical relationships report similar satisfaction levels (Balzarini et al., 2019).

Conley and Piemonte (2021) found in a comparison of various CNM forms that individuals in swinger and polyamorous relationships exhibit higher relationship satisfaction than those in open relationships, although these differences disappeared after controlling for the level of intrinsic motivation for CNM and adherence to mononormative beliefs. This indicates that there are numerous variables moderating the relationship satisfaction in both exclusive and non-

exclusive relationships. On one hand, there are variables that relate more directly to the contact between partners, such as the way communication is handled or the contact with the *metamour*[1] in non-monogamous relationships (Flicker et al., 2022; Guerrero et al., 2011; Thouin-Savard, 2021). On the other hand, there are relatively stable factors in a person's personality, such as mental health (Falconier et al., 2015), personality traits in the Big Five Model (Malouff et al., 2010) or in the Interpersonal Circumplex (Ault & Lee, 2016), as well as Bowlby's (1969) attachment styles, which influence relationship satisfaction in romantic relationships (Hazan & Shaver, 1987).

Attachment in Monogamous and Consensual Non-Monogamous Relationships

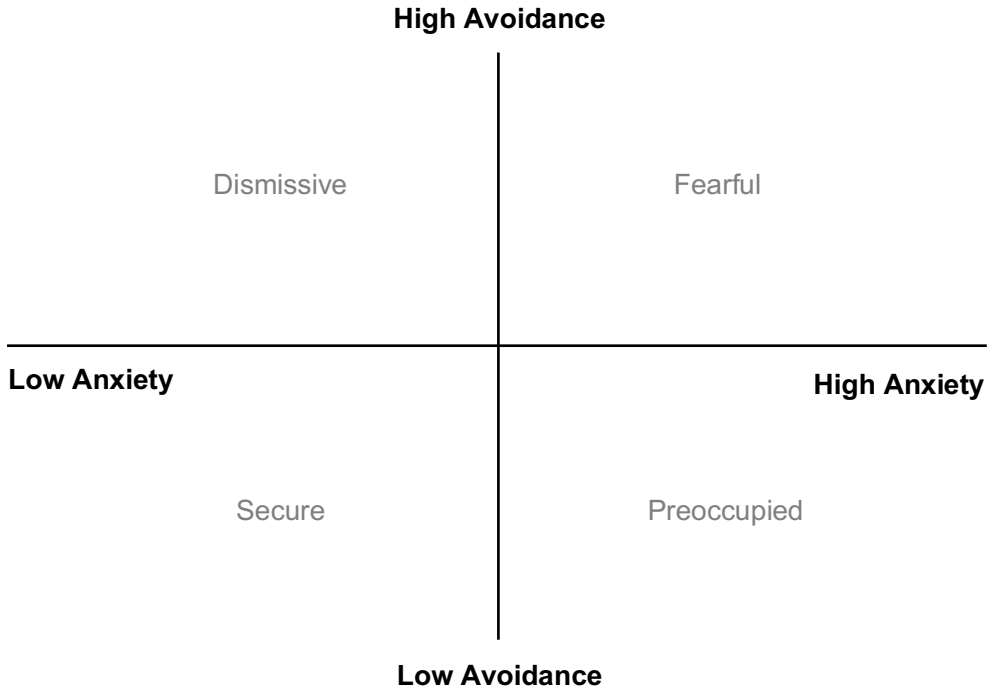
When examining predictors of relationship behavior and outcomes, attachment theory (Bowlby, 1969; Hazan & Shaver, 1987) is undoubtedly one of the most influential theories encountered. According to Bowlby (1969), interactions with primary attachment figures, usually parents during early childhood, lead to the formation of what are known as attachment styles. These are internal working models that contain expectations and patterns of behavior regarding the seeking and receiving of love, closeness, and attention from close attachment figures and, according to Hazan and Shaver (1987), they shape our experiences and behaviors in later romantic relationships. Attachment styles are primarily distinguished on two dimensions: anxiety and avoidance (Brennan & Shaver, 1995). An anxious attachment style is defined by heightened sensitivity and insecurity regarding the availability of an attachment figure and is associated with a strong need for reassurance and confirmation of the attachment figure’s presence, while an

[1] In the CNM context, *metamours* refers to two individuals who are both sexually and/or emotionally intimate with the same third person, without having a direct sexual and/or romantic relationship with each other.

avoidant attachment style is characterized by discomfort with closeness and intimacy with an attachment figure and tends to lead to a desire for independence and autonomy (Brennan et al., 1998; Flicker et al., 2021). Early authors understood attachment styles as distinct categories, meaning one is either securely, anxiously, or avoidantly attached (Ainsworth et al., 1978; Hazan & Shaver, 1987). Later works suggested that attachment styles are better understood as two continuous dimensions, as depicted in Figure 2 (Bartholomew, 1990; Fraley et al., 2015; Griffin & Bartholomew, 1994). Individuals can have moderate levels on one or both dimensions simultaneously, while a low level on both dimensions corresponds to a secure attachment style (Brennan et al., 1998). The other quadrants are often described as preoccupied (anxious), dismissive (avoidant), and fearful (anxious-avoidant), and are detailed elsewhere (e.g., Bartholomew, 1990; Fern, 2020).

Figure 2

Two-dimensional Model of Attachment



Note. This figure is based on Bartholomew (1990)

Studies suggest that a more secure attachment style is associated with more pleasant affective experience, increased trust, longer relationship duration, and higher satisfaction in romantic relationships (Butzer & Campbell, 2008; Holland et al., 2012). On the contrary, high levels of anxious and avoidant attachment styles tend to correlate with lower relationship quality and satisfaction (Saavedra et al., 2010). Notably, adult attachment research also shows a mononormative bias, often considering sexual exclusivity as an indicator of successful bonding and interpreting extradyadic sex as infidelity and breach of trust (Charny & Parnass, 1995; Fife et al., 2013). Moreover, stigma research indicates that both the general population (Séguin, 2019) and therapists (Schechinger et al., 2018) often view non-monogamous relationships as a strategy for avoiding attachment and attribute them to a lack of closeness and trust in romantic relationships.

In recent years, the number of studies examining attachment styles in relation to exclusivity agreements has been growing, and the results of these studies do not align with the stigmas (Flicker et al., 2021; Ka et al., 2020; Moors et al., 2015). Moors et al. (2015) reported that individuals scoring high on avoidant attachment are more likely to have a positive attitude towards polyamorous relationships. Furthermore, they have a desire to be in such relationships, yet this does not predict actual engagement in CNM relationships (Moors et al., 2015). Regarding actual engagement in a CNM relationship, both swingers and polyamorous individuals show lower levels of avoidant attachment styles compared to those in monogamous relationships, while there is no difference in levels of anxious attachment among these groups (Moors et al., 2015). A subsequent study by Ka, Bottcher and Walker (2020) showed a similar pattern. Flicker et al. (2021) found that individuals in hierarchical polyamorous relationship

structures report less relationship satisfaction and less attachment security than those in non-hierarchical relationships.

Furthermore, in her overview, Fern (2020) states that additional investigation is necessary to understand how attachment styles relate to relationship outcomes in all types of consensual non-monogamy. This research could help increase knowledge among the general population, therapists, and couple counselors. Assuming that attachment styles have a high degree of stability (Chris Fraley, 2002; Pinquart et al., 2013), it seems not only relevant to measure which attachment style manifestations are more frequent in which forms of relationships, but also to investigate how exclusivity agreements, certain attachment styles and satisfaction interrelate.

The Current Study

Given the rising interest in non-monogamous relationship agreements and the ongoing mononormative focus in relationship and attachment research (Scoats & Campbell, 2022), it seems relevant to generate more research in this area. For both individuals considering different exclusivity agreements and for (couples) therapists seeking to reduce distress and increase well-being, it is crucial to understand the connections between a specific attachment style, varying degrees of relationship exclusivity and satisfaction in romantic relationships.

To address the research question, an online study was conducted, surveying participants about their consensually agreed-upon levels of romantic and sexual exclusivity and their satisfaction in multiple romantic relationships in the recent past. This study marks the first instance of considering monogamous and non-monogamous relationship agreements on a continuous spectrum of exclusivity, in line with Fern's (2020) approach. Additionally, each participant answered several questions about their attachment style, resulting in individual levels on the dimensions of *anxious* and *avoidant*. Since the data on relationship exclusivity and

satisfaction is nested within individuals across multiple relationships, a multilevel model is utilized. Level 1 (lvl-1) considers differences between relationships within an individual, while level 2 (lvl-2) examines variance between individuals.

The initial objective of this study is to investigate the correlation between the exclusivity agreement (lvl-1) and the level of relationship satisfaction (lvl-1) in the examined relationships. Drawing from the review by Rubel and Bogaert (2014), it is hypothesized that there is no significant relationship (H1). Based on the presented research on attachment styles and relationship satisfaction (Butzer & Campbell, 2008; Fern, 2020), it is hypothesized that higher levels of avoidant (H2a) and anxious (H2b) attachment styles (lvl-2) negatively relate to relationship satisfaction (lvl-1). Drawing from the findings of Moors et al. (2015, 2017), it is proposed that neither the avoidant (H3a) nor the anxious (H3b) attachment style (lvl-2) is related to the relationship exclusivity (lvl-1). Finally, examining the interaction effect between attachment styles and the level of exclusivity regarding relationship satisfaction may provide insights into whether individuals with high expression of one attachment style report different satisfaction levels with a specific exclusivity agreement compared to those with a lower expression of the same attachment style. This will be explored in a moderation analysis to investigate whether the manifestations of avoidant (H4a) and anxious (H4b) attachment styles (lvl-2) influence the association between relationship exclusivity (lvl-1) and relationship satisfaction (lvl-1) in a beneficial or detrimental way.

As the data includes both past and current relationships, it is crucial to control for the relationship status of each one while testing all these hypotheses. This will help account for potential biases towards ex-relationships (Smyth et al., 2020). All hypotheses and methodological procedures were preregistered in advance (see Appendix A).

Method

Data Collection

The data was collected using two questionnaires, both of which were accessible via the platform *soscisurvey.de* on personal devices between August 23 and September 18, 2023. The first questionnaire was made available for students at the University of Kassel via an internal website ($N = 20$). Meanwhile, the second questionnaire ($N = 499$) was advertised via mailing lists and social media platforms such as Instagram and Facebook using convenience sampling. To make sure that various exclusivity agreements are appropriately covered, the second survey was shared on several channels that offer CNM educational resources. Both questionnaires collected the relevant variables in identical ways, differing only in that the student questionnaire included many more measurements that are not part of this study. The data from both questionnaires will be analyzed collectively in the following.

Participants

Following the preregistered criteria of this study (see Appendix A), the following individuals were initially excluded from the final dataset: one person who did not consent to the use of their data, one person who indicated on the last page that they had not responded seriously, four individuals based on a quality indicator created by soscisurvey.de (Leiner, 2019) for extremely fast and unrealistic completion ($TIME\_RSI > 2$), and six individuals due to straightlining, as they provided the same answer for entire pages of the questionnaire despite a control item and several inversely coded items. A total of $N = 497$ participants who completed the questionnaire and responded to inquiries concerning at least one romantic relationship were included for the following data analysis. All participants agreed to the anonymous scientific

evaluation of their data and to the data protection guidelines outlined on the initial pages of the questionnaire (see Appendices B and C).

In total, these individuals reported 1,159 relationships, which will be described in more detail under *relationship sampling* below. Among the participants, 71.6% were female, 18.3% male, 8.0% non-binary, and the rest (n = 10) either did not provide a gender or specified their own. The average age was $M = 33.21$ years ($SD = 8.73$). Regarding educational level, 95.8% of respondents had at least a high school diploma, and 62.6% had at least a university degree. 45.3% of the participants identified as heterosexual in their current sexual orientation, 3.4% as homosexual, 26.2% as bisexual, 1.2% as pansexual, 3.4% as asexual, and 19.7% indicated having another sexual orientation, while 4 individuals did not provide any information on this.

Measurement Instruments

Within-Person Measures

Relationship Sampling. Participants were asked about the exclusivity agreement and relationship satisfaction in their last up to four romantic relationships in successive sections. The first inquiry was about the most recent romantic relationship, which could be either current or past, characterized by regular contact over a minimum period of three months, and should refer to the most recent period of this relationship if there were interruptions or breaks. In case of multiple simultaneous relationships, participants were instructed to focus first on the relationship that started most recently. After collecting various data about this relationship, the next sections focused on the second most recent, then the third most recent relationships. In case of multiple simultaneous relationships, the one that started second or third most recently should be chosen. For each relationship, in addition to exclusivity and satisfaction, descriptive data such as the

duration of the relationship, age at the beginning of the relationship, and whether the relationship is currently ongoing or has ended were collected.

Of the 1,159 relationships, 47.7% were still ongoing at the time of the survey The average duration for all relationships was $M = 4.44$ years ($SD = 5.34$ years). The respondents reported an average age of $M = 25.82$, $SD = 8.32$ years at the start of their respective relationships, while they recalled the age of their partners at the beginning of the relationship as $M = 27.46$, $SD = 8.62$. These and other descriptive statistics are presented in Table 1, divided by the five levels of relationship exclusivity.

Relationship Exclusivity. The exclusivity of each reported relationship was evaluated through self-report. For this purpose, an item was developed that places the monogamous agreement and the various CNM categories on a continuum of romantic and sexual exclusivity following the model based on Fern (2020), as outlined in Figure 1. The focus was on only one diagonal axis of romantic and sexual exclusivity (from top left to bottom right), thereby operationalizing the degree of romantic and sexual exclusivity on a common continuous scale. After several rounds of testing for comprehensibility and feasibility in pre-tests with monogamous and non-monogamous subjects, the final item was: "Which agreement, whether explicit or implicit, has most accurately or most of the time existed between you and your partner regarding sexual and romantic contacts with other people?" (original in German, see Appendix D). The response options were displayed on a five-point scale in a dropdown menu following an introductory phrase: "Sexual and romantic contacts with other people were... (1) excluded (e.g., in monogamous relationships), (2) allowed under strict conditions or in exceptions (e.g., swinging; only together with the partner), (3) allowed under certain conditions (e.g., in open relationships; more just sexual contacts or only with certain people or in certain situations); (4)

allowed with few conditions (e.g., hierarchical polyamory; sexual and romantic contacts with other people); (5) unconditionally allowed (e.g., non-hierarchical polyamory; possible with all people at any time)" (original in German, see Appendix D).

Relationship Satisfaction. The satisfaction in each reported relationship was assessed using a single item from the Couples Satisfaction Index (CSI; Funk & Rogge, 2007). Respondents rated their level of satisfaction on a seven-point Likert Scale (1 = *extremely dissatisfied* to 7 = *perfect*). The item was: "Wie glücklich sind Sie mit der Beziehung im Durchschnitt gewesen?" [How happy have you been with the relationship on average?].

Relationship Status (Control Variable). To control for potential bias in comparing current versus terminated relationships, an item was included for each reported relationship to ascertain whether it is currently ongoing or not. The response format was dichotomous (Yes/No). In subsequent analyses, the variable is coded with 0 for *ongoing* and 1 for *ended*.

Between-Person Measure

Attachment Styles. Attachment styles were measured using the German version of the established *Adult Attachment Scale* (AAS) by Schmidt et al. (2004). This questionnaire was chosen for its suitability in addressing stable attachment styles across multiple relationships, unlike other commonly used questionnaires like the ECR-R (Fraley et al., 2000), which focus more on attachment experiences in a specific romantic relationship. It included 15 items rated on a five-point Likert scale from "does not apply at all" to "applies completely" culminating in three scales: "Depend," "Close," and "Anxiety," each with 5 items. The average of the first two scales combined represents the level of an avoidant attachment style as defined by Hazan and Shaver (1987), while the score of the "Anxiety" scale corresponds to the level of an anxious attachment style. Scores for both attachment styles range from 5 to 20, with higher scores indicating stronger

manifestations. According to Schmidt et al. (2004), these scores represent adult attachment attitudes and orientations, forming dimensional, typological structures as suggested in the meta-analysis by Fraley and Waller (1998). The internal consistency of the three scales in this study was satisfactory, with $\alpha = .81$ for the "Close" scale, $\alpha = .84$ for the "Depend" scale, and $\alpha = .74$ for the "Anxiety" scale, roughly matching the values reported by Schmidt et al. (2004).

Procedure

Both questionnaire versions (student and community) began with an introduction highlighting study procedures, voluntary participation, and data protection. For completing the questionnaire, the student version offered credit towards a BA degree (see Appendix B), while the community version offered participants the chance to enter a draw for counseling sessions (see Appendix C). Then participants provided sociodemographic data and information about up to four current or past romantic relationships. In the student version, participants could report up to four relationships, while in the community version, participants could report up to three in total and opt to stop after two relationships. The questionnaires then assessed attachment styles, and the student version included additional personality trait measurements. The community version concluded with a confirmation of conscientious participation and an option to provide contact details for the counseling draw and to receive study results.

Analytic Strategy

Descriptive and inferential statistical analyses of Hypotheses 1 to 4 were conducted in R (Version 4.3.1). Due to the hierarchical data structure, multilevel models (MLMs) were employed. Hypotheses were tested in four separate MLMs using the restricted maximum likelihood (REML) estimation method from the *lme4* package (Version 1.1.34 by Bates et al., 2015). All models included random intercepts and, where convergent, random slopes.

Unstandardized fixed effect coefficients were evaluated using confidence intervals based on 1000 bootstrap samples, following Lai (2021). Standardized coefficients were also calculated for comparison with other studies. Each model's random effects and the intraclass correlation coefficient (ICC) were reported to assess variance within and between individuals. Model fit was determined using pseudo-R^2, following Nakagawa and Schielzeth (2013), calculated for variance explained by fixed effects alone (R^2 marginal) and by both fixed and random effects (R^2 conditional).

Relationship satisfaction (lvl-1) was predicted by relationship exclusivity (lvl-1) in Model 1 for Hypothesis 1, and by attachment styles (lvl-2) in Model 2 for Hypothesis 2. To test Hypothesis 3, Model 3 predicted relationship exclusivity (lvl-1) using attachment styles (lvl-2). An exploratory fourth MLM for Hypothesis 4 predicted relationship satisfaction (lvl-1) using relationship exclusivity (lvl-1), attachment styles (lvl-2), and their cross-level interaction.

Models with attachment styles included scores for both avoidant and anxious attachment. All four models controlled for relationship status (*ongoing* or *ended*). Predictors in Model 4 were grand mean-centered to enhance interpretability and reduce potential multicollinearity, as suggested by (Shieh, 2011).

Each model's assumptions were individually assessed. Linearity was checked using scatterplots of lvl-1 residuals against predicted values. Normal distribution of lvl-1 and lvl-2 residuals was examined using histograms and Q-Q plots, and homoscedasticity was assessed using scatterplots of lvl-1 residuals against fitted values. Variance Inflation Factor (VIF) analysis was conducted for each model's predictors to detect multicollinearity, with a threshold value of 10 indicating potential issues (O'Brien, 2007).

Results

Descriptive Statistics

For a description of the participants ($N = 497$), refer to the Method section. Table 1 presents the mean values and standard deviations of the relevant study variables, along with descriptive data for the total of 1,159 relationships and separately for each of the five levels of relationship exclusivity.

Upon visual inspection of histograms for the study variables relationship satisfaction, relationship exclusivity, avoidant attachment, and anxious attachment, relationship exclusivity was not normally distributed, with 41.16% of relationships labeled at level 1. Relationship satisfaction appeared to follow a normal distribution, while both attachment styles were slightly right-skewed (skewness: 0.53 for avoidant and 0.38 for anxious).

Pairwise correlations of the relevant study variables are displayed in Table 2. The linearity of these relationships was approximately met, but the assumption of normal distribution was violated, as indicated by the histograms and Q-Q plots. Therefore, confidence intervals from the robust, non-parametric bootstrapping method should be considered.

Multi-Level Models

Model 1: Relationship Exclusivity and Relationship Satisfaction

During the estimation of Model 1, convergence issues arose, leading to the model being re-computed without random slopes. The b-value and its corresponding confidence interval for relationship exclusivity remained unchanged compared to the model with random slopes. Estimation problems will be further discussed in the discussion section.

Table 1

Descriptive Statistics for Study Variables, Overall and by the Five Levels of Relationship Exclusivity

Relationship exclusivity [a]	**Overall**	1. Level	2. Level	3. Level	4. Level	5. Level
Number of relationships	**n = 1159 (100%)**	n = 477 (41.16%)	n = 53 (4.57%)	n = 174 (15.01%)	n = 182 (15.70%)	n = 273 (23.55%)
Current relationships [b]	**n = 553 (47.7%)**	n = 146 (30.6%)	n = 26 (49.1%)	n = 89 (51.1%)	n = 123 (67.6%)	n = 169 (61.9%)
Duration (years) [c]	**4.44 (5.34)**	5.38 (5.88)	5.89 (5.24)	4.45 (5.33)	4.50 (5.48)	2.46 (3.39)
Own age (years) [d]	**25.82 (8.32)**	22.89 (7.72)	24.32 (6.40)	27.18 (8.75)	27.43 (6.95)	29.30 (8.43)
Partner‘s age (years) [d]	**27.46 (8.62)**	24.89 (8.61)	26.36 (8.64)	28.37 (8.25)	28.85 (7.77)	30.65 (8.09)
Relationship satisfaction	**4.26 (1.32)**	3.94 (1.33)	4.34 (1.37)	4.16 (1.33)	4.64 (1.16)	4.60 (1.23)
Avoidant attachment	**10.85 (3.57)**	10.88 (3.67)	11.60 (3.84)	10.81 (3.51)	10.89 (3.50)	10.66 (3.43)
Anxious attachment	**11.73 (4.03)**	11.51 (4.03)	11.58 (3.95)	11.71 (4.00)	12.25 (4.09)	11.80 (4.04)

Note. First two rows: count (proportion); remaining rows: *M*(*SD*).

[a] *M* = 2.76 (*SD* = 1.65) and levels range from 1 = excluded (e.g., monogamy) to 5 = fully allowed (e.g., non-hierarchical polyamory). [b] Number and percentage of ongoing relationships at each level. [c] Relationship duration in years. [d] Age at the start of each relationship.

Table 2

Correlations, Mean and Standard Deviations for Study Variables

Variable	1.	2.	3.	4.
1. Relationship satisfaction (lvl-1)	–			
2. Relationship exclusivity (lvl-1)	.22*** [.17, .28]	–		
3. Avoidant attachment (lvl-2)	-.16*** [-.22, -.10]	-.03 [-.08, .03]	–	
4. Anxious attachment (lvl-2)	-.11*** [-.16, -.05]	.04 [-.02, .10]	.50*** [.45, .55]	–

Note. N (lvl-1)= 1159. *** $p < .001$, Pearson product-moment correlations, two-tailed tests adjusted for multiple testing (Holm, 1979). In brackets are 95% confidence intervals via bootstrapping (1000 samples).

Regarding the assumptions of Model 1, linearity appeared to be approximately met, as no systematic patterns were observed in the scatterplot. The histograms and Q-Q plots of lvl-1 and lvl-2 residuals showed an approximate normal distribution. The scatterplot of lvl-1 residuals against fitted values indicated a tendency towards homoscedasticity with slight deviations, possibly due to the discrete nature of the criterion variable while the fitted values take on continuous values. The analysis of Variance Inflation Factor (VIF) revealed values below 10, suggesting the absence of significant multicollinearity in the model.

Table 3 presents the results of Model 1. Contrary to Hypothesis 1, relationship exclusivity positively predicted relationship satisfaction after controlling for relationship status. The unstandardized coefficient was considered statistically significant as the bootstrapped confidence intervals did not include zero.

Table 3

Multilevel Analysis of Relationship Satisfaction Predicted by Relationship Exclusivity (Model 1)

Predictors	*b* [95% CI[a]]	*SE*[a]	*Std. Beta*
Intercept	4.88 [4.72, 5.04]	0.08	0.57
Relationship status (ended) (lvl-1)	-1.44 [-1.58, -1.31]	0.07	-1.10
Relationship exclusivity (lvl-1)	0.05 [0.01, 0.09]	0.02	0.06

Note. N (lvl-1) = 1159, N (lvl-2) = 497. σ^2 (between-person) = 0.06 (*SD* = 0.24);
σ^2 (within-person) = 1.12 (*SD* = 1.06); ICC = 0.05; R^2 (marginal / conditional) = .323 / .356.

[a] Confidence intervals and standard errors via bootstrapping (1000 samples).

Model 2: Attachment Styles and Relationship Satisfaction

Model 2 could not be estimated with random slopes due to insufficient data points for convergence. Subsequently, the possibility of simplified models was explored, each involving only one attachment style and one random slope per person. However, these simplified models also faced convergence issues, leading to the calculation of the model without random slopes.

Regarding the assumption tests, they indicated that the residuals were approximately linear, normally distributed, and exhibited homoscedasticity. Additionally, the examination of VIF values suggested the absence of multicollinearity issues.

In Table 4, you can find the results of Model 2. As hypothesized in Hypothesis 2a, the avoidant attachment style had a statistically significant negative effect on relationship satisfaction. Regarding Hypothesis 2b, the effect of the anxious attachment style was negative but not statistically significant, as the confidence interval included zero.

Table 4

Multilevel Analysis of Relationship Satisfaction Predicted by Attachment Styles (Model 2)

Predictors	*b* [95% CI[a]]	*SE*[a]	*Std. Beta*
Intercept	5.67 [5.44, 5.89]	0.12	0.59
Relationship status (ended) (lvl-1)	-1.48 [-1.60, -1.35]	0.06	-1.12
Avoidant attachment (lvl-2)	-0.04 [-0.06, -0.02]	0.01	-0.12
Anxious attachment (lvl-2)	-0.02 [-0.03, 0.00]	0.01	-0.05

Note. N (lvl-1) = 1159, N (lvl-2) = 497. σ^2 (between-person) = 0.03 (*SD* = 0.17);
σ^2 (within-person) = 1.12 (*SD* = 1.06); ICC = 0.02; R^2 (marginal / conditional) = .340 / .356.

[a] Confidence intervals and standard errors via bootstrapping (1000 samples).

Model 3: Attachment Styles and Relationship Exclusivity

In Model 3, random slopes were also dropped due to convergence issues. Concerning the model assumptions, lvl-1 residuals appeared to approximate a normal distribution, while the analysis of lvl-2 residuals indicated deviations from normality, as evidenced by both the histogram and Q-Q plot. However, based on the simulation study by Maas and Hox (2004), using bootstrapping, especially the fixed effects, and for sample sizes above $N = 50$ at lvl-2, the random effects, remained reliable. Assumptions of homoscedasticity and the absence of multicollinearity appeared to be met.

Table 5 presents the results of Model 3. Consistent with Hypotheses 3a and 3b, neither the avoidant nor the anxious attachment style exhibited a significant association with Relationship Exclusivity, as the confidence intervals included the null lines.

Table 5

Multilevel Analysis of Relationship Exclusivity Predicted by the Attachment Styles (Model 3)

Predictors	*b* [95% CI[a]]	*SE*[a]	*Std. Beta*
Intercept	3.03 [5.59, 3.48]	0.22	0.24
Relationship status (ended) (lvl-1)	-0.88 [-1.02, -0.73]	0.07	-0.53
Avoidant attachment (lvl-2)	-0.03 [-0.06, 0.01]	0.02	-0.06
Anxious attachment (lvl-2)	0.04 [0.00, 0.07]	0.02	0.09

Note. N (lvl-1) = 1159, N (lvl-2) = 497. σ^2 (between-person) = 1.14 (*SD* = 1.07); σ^2 (within-person) = 1.37 (*SD* = 1.17); ICC = 0.46; R^2 (marginal / conditional) = .077 / .497.

[a] Confidence intervals and standard errors using bootstrapping (1000 samples).

Model 4: Attachment Styles, Relationship Exclusivity and Relationship Satisfaction

In Model 4, the cross-level interaction between attachment styles and relationship exclusivity regarding relationship satisfaction was examined. The predictors were previously centered around their grand mean. The model converged with random slopes. Normal distribution of lvl-1 and lvl-2 residuals, as well as assumptions of linearity and homoscedasticity of the residuals, were approximately met. The VIF values of the centered predictor variables were below the threshold of 10, indicating the absence of multicollinearity issues.

The results in Table 6 indicate that no statistically significant interaction effect between attachment styles and relationship exclusivity regarding relationship satisfaction was found.

Table 6

Multilevel Analysis of Relationship Satisfaction with Cross-Level-Interaction (Model 4)

Predictors	*b* [95% CI[a]]	*SE*[a]	*Std. Beta*
Intercept	5.00 [4.91, 5.10]	0.05	0.57
Relationship status (ended) (lvl-1)	-1.43 [-1.55, -1.30]	0.07	-1.08
Relationship exclusivity (lvl-1)	0.05 [0.01, 0.09]	0.02	0.06
Avoidant attachment (lvl-2)	-0.04 [-0.06, -0.02]	0.01	-0.11
Anxious attachment (lvl-2)	-0.02 [-0.03, 0.00]	0.01	-0.05
Avoidant attachment (lvl-2) × relationship exclusivity (lvl-1)	0.00 [-0.02, 0.01]	0.01	-0.02
Anxious attachment (lvl-2) × relationship exclusivity (lvl-1)	0.00 [-0.01, 0.01]	0.01	0.02

Note. N (lvl-1) = 1159, N (lvl-2) = 497. σ^2 (between-person) = 0.03 (*SD* = 0.18); σ^2 (within-person for relationship exclusivity) = 0.00 (*SD* = 0.06); σ^2 (within-person) = 1.10 (*SD* = 1.05); R^2 (marginal / conditional) = .343 / .366. All variables, except for relationship status, have been grand mean centered. [a] Confidence intervals and standard errors using bootstrapping (1000 samples).

Discussion

The objective of this study was to shed more light on the research concerning attachment styles, various agreements regarding romantic and sexual exclusivity in romantic relationships and their connection to relationship satisfaction. This involved examining how the degree of relationship exclusivity and the manifestations of avoidant and anxious attachment styles are interrelated and how they predict and interact regarding satisfaction in romantic relationships.

Interpretation of Results

Relationship Exclusivity and Relationship Satisfaction

In Hypothesis 1, based on prior literature, it was assumed that there would be no significant correlation between relationship exclusivity and relationship satisfaction, essentially indicating a null effect (Cox et al., 2021; Rubel & Bogaert, 2014). However, the findings of this study indicated a small positive relationship between the two variables, with $\beta = 0.06$. This minor effect motivates a hypothesis that a consensual agreement involving less sexual and/or

romantic exclusivity tends to correlate with higher relationship satisfaction. To my knowledge, there are no other study findings that report higher general relationship satisfaction in CNM relationships, when considered as a consolidated group, compared to monogamous ones.

The difference to other studies may be particularly due to the continuous measurement of relationship exclusivity. In a post hoc analysis of the data in this study, when all CNM categories (corresponding to levels 2 to 5 of relationship exclusivity) are combined into one group and compared with the monogamous group, there is no significant difference observed between these groups, $\beta = 0.08$, CI [-0.02, 0.19] (see table in Appendix E). This is likely because the mean comparison of the two groups masks the continuously increasing trend of the five exclusivity levels.

One explanation for increasing relationship satisfaction with continuously decreasing exclusivity might be that CNM forms, with decreasing exclusivity, deviate more from our mononormative society. This requires a high level of engagement and communication, especially among those in polyamorous relationships (levels 4 and 5), as there are few relationship role models beyond monogamy from which relationship rules and behaviors can be implicitly adopted (Fern, 2020; Mogilski et al., 2019; Thouin-Savard, 2021). Studies suggest that this leads to communication patterns in polyamorous relationships that are among the most effective methods for positive dyadic relationships in general, which in turn is a predictor of higher general relationship satisfaction (Conley & Moors, 2014). Another cause might be that people in CNM relationships tend to be happier with their sex lives (Conley et al., 2018), which is highly correlated with relationship satisfaction (Byers, 2005; Schoenfeld et al., 2017).

Increasing satisfaction in less exclusive relationships may also stem from a deeper resonance with CNM values. For instance, in more exclusive CNM arrangements like open

relationships, it's often seen that one partner persuades the other to transition to non-monogamy, a dynamic less common in (non-hierarchical) polyamorous relationships (Thouin-Savard, 2021). Research suggests that choosing a non-monogamous relationship type based on personal conviction and alignment with CNM principles is crucial for relationship satisfaction (Conley & Piemonte, 2021; Flicker et al., 2022; Thouin-Savard, 2021).

Another explanation could be that people at levels 4 and 5 of the exclusivity variable are allowed both emotional and sexual intimacy, while in slightly more exclusive open relationships, it is usually agreed to only allow sexual contact outside the primary relationship. Authors of previous studies assume that, despite this agreement, it is common in open relationships for people to fall in love in their affairs, which they then either suppress with effort or confess to their partner, who then feels cheated and hurt (Conley et al., 2017). Therefore, it could be assumed that open relationship agreements can lead to less relationship satisfaction. This aligns with various studies that report significantly higher values of relationship satisfaction among polyamorous people compared to those in monogamous relationships, while individuals in open relationships are significantly less satisfied than monogamous ones (Conley et al., 2017, 2018).

Post hoc subgroup comparisons of the present data against the monogamous group, after controlling for whether the relationship has ended, suggest a similar pattern: Regarding relationship satisfaction, none of the CNM subgroups differs significantly from the monogamous reference group, except for people in non-hierarchical polyamorous relationships at level 5 of exclusivity, $\beta = 0.16$, CI [0.04, 0.38]. For people in open relationships, there is even a slight negative effect of -0.05 observed, CI [-0.26, 0.12], which, however, due to the wide confidence interval, is considered statistically insignificant (see Table in Appendix F).

Attachment Styles and Relationship Satisfaction

Hypothesis 2 posited that both attachment styles would be negatively associated with relationship satisfaction. The data from this study reveals small negative correlations for both styles, but only the effect of the avoidant attachment style is statistically significant (β = -0.12). Most prior studies indicate a statistically significant negative relationship between both attachment styles and relationship satisfaction, as well as other positive relationship outcomes. However, a meta-analysis by Li and Chan (2012) also provides substantial evidence that the avoidant attachment style correlates more significantly with relationship dissatisfaction than the anxious attachment style (e.g., Butzer & Campbell, 2008; Feeney, 2002; Hammond & Fletcher, 1991; Li & Chan, 2012; Meyers & Landsberger, 2002; Shaver & Brennan, 1992). Two studies also reported that the negative association with the avoidant style becomes significant, whereas the relationship with the anxious style does not hold statistical significance (Fricker & Moore, 2002; Towler & Stuhlmacher, 2013).

This may be because individuals with an avoidant attachment style tend to avoid intimacy and seek less support in relationships, leading to dissatisfaction (Feeney, 2002; Shaver & Brennan, 1992). On the other hand, individuals with an anxious attachment style, although they may encounter problems in long-term relationships, invest heavily in the relationship and do not show significantly lower connectedness compared to securely attached individuals in the meta-analysis by Li and Chan (2012). Previous research suggests that the avoidant attachment style particularly has a strong negative impact on satisfaction in dating relationships, while the negative effect of the anxious attachment style becomes more apparent over time, especially in (longer) marriages (Feeney et al., 1994, 1996). The greatest desire of anxiously attached individuals is to get closer to their partner, while their highly sensitive response to attachment-

threatening stimuli often becomes problematic later in a relationship (Li & Chan, 2012). With an average relationship duration of 4.44 years in the data of this study, it is notable that many relationships are not very old, making it plausible that the negative effects of the avoidant style are more pronounced.

Additionally, it is noteworthy that the two dimensions of anxiety and avoidance correlate highly with each other at $r = .50$, which is closer than in other studies, such as $r = .32$ reported by Ehrenthal et al. (2021). Although the approach of jointly considering both attachment styles in one model is standard in attachment studies (Li & Chan, 2012), the high correlation indicates a risk of a confounding effect. Post hoc examination of simplified models, each incorporating only one attachment style, suggests that in the absence of the avoidant attachment style, the anxious attachment style may be independently associated with relationship satisfaction ($\beta = -.10$; see Appendix G).

Attachment Styles and Relationship Exclusivity

In line with Hypotheses 3a and 3b, neither avoidant nor anxious attachment styles showed a significant correlation with relationship exclusivity. This near-null effect suggests that individuals with pronounced insecure attachment style are not more likely to choose less exclusive relationships than those with a secure attachment. This finding is consistent with the relatively sparse literature on these associations (Flicker et al., 2021; Ka et al., 2020; Moors et al., 2015) and counters the common prejudice that CNM relationships are a form of avoidance strategy for closeness and attachment (Schechinger et al., 2018; Séguin, 2019). Moors et al. (2015) note that avoidant individuals might prefer less exclusive relationships, but this doesn't translate into greater actual engagement. This study's data aligns, showing avoidant individuals are not more likely to maintain such relationships for at least three months, a key sampling

criterion, compared to less avoidant (or securely) attached counterparts. Supporting this, other studies report that individuals in CNM relationships describe a high degree of trust and intimacy, which contradicts the notion of strong attachment avoidance, and exhibit a relatively low level of jealousy, which is atypical for those with attachment anxiety (Barker, 2005; Bonello & Cross, 2009).

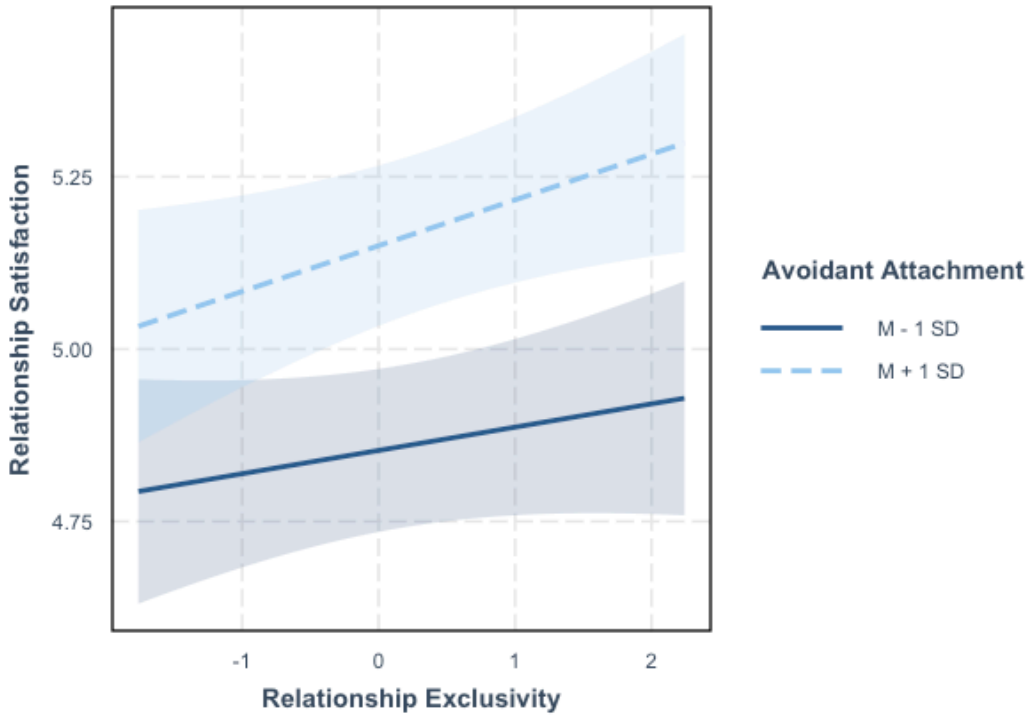
Interaction between Attachment Styles and Relationship Exclusivity

Hypothesis 4 explored whether the two attachment styles influence the relationship between exclusivity and satisfaction. The results did not show a significant moderating role for either attachment style, suggesting that relationship satisfaction consistently correlates with relationship exclusivity across different levels of avoidant and anxious attachment. Figure 3 illustrates the relationship between exclusivity and satisfaction at high and low levels of avoidant attachment (the diagram for anxious attachment is presented in Appendix H). The trend of the main effects of exclusivity and avoidant attachment is evident, with no interaction due to the almost parallel lines.

For instance, if a person with a high level of avoidant attachment wonders whether they would be happier in an exclusive or less exclusive relationship, the present data does not advise differently than it would for a person with low avoidance. The same applies to the anxious attachment style. It is important to note that the causal direction of the main effects in the data remains unclear, and it might be that individuals with higher relationship satisfaction are more likely to open their relationship to less exclusivity.

Figure 3

Interaction Plot of Avoidant Attachment and Relationship Exclusivity Predicting Relationship Satisfaction



Note. Association between Relationship Exclusivity and Satisfaction at Different Levels of Avoidant Attachment Style (high: *M* + 1 *SD*, low: *M* - 1 *SD*). Gray areas represent 95% confidence intervals.

Estimation Problems, Random Effects, and Variance Explanation in Multilevel Models

Given the dependent structure of relationships, four multilevel models were computed to test the hypotheses. To control for individual differences in dependent variables, random intercepts and slopes were intended for inclusion. However, the first three models encountered convergence issues. A correlation of $r = -1.00$ between random intercepts and slopes in these models suggested that random slopes added no explanatory value, and an ICC of 0.05 and 0.02 for the first two models indicated a small proportion of variance in relationship satisfaction attributable to between-person differences. The overfitting and convergence issues of the models might be due to the relatively few observations (relationships) per cluster (individuals) and 82 cases with only one observation (relationship) per person. Particularly in Models 2 and 3, there

were insufficient observations for 1491 random effects (1 intercept and 2 random slopes for attachment styles per person). Although random slopes are theoretically sensible, given the potential for individuals to exhibit different slopes in variable correlations, models were computed without random slopes following (Nezlek, 2012) due to convergence issues. It's noteworthy that non-fully converged models with random slopes showed no differences in relevant effects. Model 4, however, seemed to converge when including random slopes for relationship exclusivity. Nevertheless, the very small within-person variance in random slope for relationship exclusivity ($\sigma 2 = 0.00$, $SD = 0.06$) suggests a consistent effect of relationship exclusivity on satisfaction across individuals. Compared to a model without random slopes, results did not differ.

All models analyzing relationship satisfaction as the dependent variable demonstrated high variance explanation for fixed effects, accounting for 32.3% to 34.3% of the variance. This is notable considering the various factors influencing relationship satisfaction. Notably, the control variable, relationship status ($\beta = -1.08$ to -1.12), not attachment styles or relationship exclusivity, contributed most significantly to this variance. This reflects the tendency of individuals to overestimate current relationship satisfaction (positive bias) and undervalue past relationships retrospectively (negative bias) (Fletcher, 2015; Karney & Coombs, 2000; Smyth et al., 2020). The lower variance explanation in Model 3 is expected, given the near-null effects of both attachment styles, while an ICC of 0.46 indicates significant between-person differences in average relationship exclusivity.

General Comparability, Limitations, and Future Directions

A limitation in the general comparability of this study's results is the targeted recruitment of participants. Compared to Rubin et al.'s (2014) representative non-targeted sample in the

USA, in which 5.3% were in non-monogamous relationships, the proportion of CNM relationships in this study is significantly higher. Additionally, non-binary individuals and those with non-heterosexual orientations, particularly bisexuals, are highly overrepresented compared to the general German population (BMFSFJ, 2016; Zandt, 2023), and the education level is considerably higher than in Germany (33.5% with a university entrance qualification, (*Bildungsstand*, 2019). However, the sample composition is similar to other targeted CNM studies (Flicker et al., 2021). The frequency of non-monogamous subgroups also aligns with distributions in other studies, like Conley et al.'s (2018) non-targeted sample, where swingers constituted 18%, open relationships 31%, and polyamorous (both non-hierarchical and hierarchical) 52% of all CNM relationships.

Given the need for sufficient data on less exclusive relationships to test the hypotheses, the recruitment method was appropriate and is common in studying marginalized groups (Bonevski et al., 2014). Nevertheless, the sample is not representative of the general population in German-speaking areas. Moreover, the sample might significantly consist of individuals highly identifying with CNM, engaged in improving their CNM relationships, or generally interested in relationship research, potentially biasing the results. Therefore, more studies should be designed to gather participants without targeted recruitment until enough CNM relationships are included, as in Conley et al.'s (2018) second study. Ideally, efforts should also involve engaging individuals with limited internet access, like those from lower SES backgrounds. While representative large-size panels like *pairfam* already collect data on attitudes towards sexual exclusivity (Brüderl et al., 2023), such research groups are encouraged to include questions on consensual non-monogamy.

Furthermore, this study's design involving hierarchically structured data differs from other CNM studies. Collecting multiple relationships per person not only increases statistical power but also allows for the observation of intra-personal differences. However, literature suggests that assessments of past relationship satisfaction and emotions may be prone to memory errors and biases (Smyth et al., 2020; Zengel et al., 2019). Descriptive statistics and the negative correlation between relationship status and relationship exclusivity in Model 3 indicate that less exclusive relationships tend to be current, while more exclusive (especially monogamous) ones are often concluded. As participants reported on their most recent, second, and third most recent romantic relationships, it appears that the most recent were usually less exclusive (e.g., polyamorous), while those with a more distant onset were more exclusive (e.g., monogamous). A post-hoc correlation between the order of reported relationships and Relationship Exclusivity supports this, r (742) = -.242, $p < .001$, CI [-0.309, -0.173]. This pattern may particularly stem from targeted recruitment within CNM circles. It's plausible that individuals from polyamorous communities reported their last two less exclusive relationships (which may have been concurrent) and a monogamous relationship as their third most recent. This aligns with the notion that people often experience a developmental process from normative to non-normative relationship models (Ritchie & Barker, 2006). In this process, former monogamous relationships might be perceived as outdated and less satisfying, whereas the newer polyamorous form is seen as a liberating deviation from constraining norms. Although models controlled for whether the relationship had ended, future studies with a true longitudinal design are advisable to inquire about satisfaction during the relationship, rather than retrospectively. In this context, temporal trajectories can provide deeper insight into the evolution of relationship exclusivity. For instance, it would be interesting to investigate whether individuals' development in a longitudinal design

indeed trends towards CNM relationships, whether opening relationships leads to increased satisfaction, or if many experiment with CNM, find it unsatisfying, and revert to monogamy. This approach would thus enable the exploration of the causal dynamics within the relationships between the variables considered in this study.

A significant novelty in this study is operationalizing relationship exclusivity as continuous rather than categorical, unlike previous studies. This approach, based on Fern (2020), aligns well with the four CNM sub-forms arrayed along a continuum of increasing exclusivity. Participants frequently commended this approach in the survey's comment section, noting it was easier to place their relationship agreement on one of the five exclusivity levels than to fit it into abstract, unsorted categories. However, this novel method limits comparability with other studies. It's also noteworthy that the two dimensions of emotional and sexual exclusivity, depicted in Figure 1 according to Fern (2020), were combined into a single dimension. However, it's important to consider that this unified dimension may not fully capture the nuances of CNM relationships, as they could be rated high in emotional exclusivity but low in sexual exclusivity, or the other way around. Particularly, asexual individuals might struggle to select an accurate level of sexual and romantic exclusivity with this study's framing, as indicated by comments at the questionnaire's end. Future studies may benefit from separately measuring and testing both emotional and sexual exclusivity dimensions.

An additional limitation to note is that participants were asked to report the exclusivity agreement that "best or most often" applied to their relationships. As studies suggest, exclusivity agreements often change throughout a relationship (Flicker et al., 2022; Thouin-Savard, 2021; Vilkin & Davila, 2023), which could have posed difficulties for some individuals in determining the predominant agreement. The same applies to the measurement of relationship satisfaction. A

longitudinal study capturing exclusivity agreements and satisfaction at multiple points in a relationship might be beneficial.

Next, using the Adult Attachment Scale (Schmidt et al., 2004) seems sensible to operationalize attachment styles as general, stable personality traits, rather than focusing on attachment in current romantic relationships (as more intended in the ECR, Fraley et al., 2000). However, the literature on attachment styles and relationship satisfaction, both within and outside a CNM context, predominantly uses the ECR (Fraley et al., 2000) or ECR-R (Fraley et al., 2011), which measure two scores on the dimensions of avoidance and anxiety, similar to the AAS dimensions. So further testing of models with the ECR-R, or its German short version (ECR-RD8, Ehrenthal et al., 2021), is recommended for better comparability with other studies. Some longitudinal studies (Cozzarelli et al., 2003) and Fern (2020) note that attachment styles are not deterministic, but can evolve, especially when transitioning between partners. Therefore, longitudinal data capturing current attachment styles, which may have changed since the last relationship, are necessary.

Regarding relationship satisfaction, it was operationalized using a single item from the Couples Satisfaction Index (Funk & Rogge, 2007). Although single items can be valid operationalizations of constructs according to Bergkvist and Rossiter's (2007) overview study, they only represent a very abstract relationship outcome. It would be interesting to further differentiate relationship satisfaction and examine how other outcomes, such as relationship-related positive and negative emotions, relate to relationship exclusivity and attachment styles. A diary study, for instance, capturing the frequency of daily emotions related to the relationship could provide insightful data.

Finally, future research could explore the concept of *compersion* in the CNM context: a feeling of joy and warmth when one's partner engages in sexual or romantic interactions with others (Flicker et al., 2021; Thouin-Savard, 2021). It would be enlightening to examine how this concept relates to attachment styles and the degree of exclusivity. Jealousy is often cited as the main reason for not pursuing a CNM relationship, and compersion could be a way to mitigate excessive jealousy. And it likely has a significant impact on overall relationship satisfaction especially in less exclusive relationships (Flicker et al., 2022; Flicker et al., 2021), but possibly also in monogamous relationships.

Conclusion and Pratical Implications

This study is the first to conceptualize the distinction between monogamous and various forms of consensually non-monogamous (CNM) relationships as a continuous variable, relating it to attachment styles and relationship satisfaction. Given this operationalization and the limitations discussed, the data suggest that individuals in less exclusive relationships tend to be slightly more satisfied. Additionally, the results emphasize that the avoidant attachment style is associated with lower relationship satisfaction across all relationships, and that the agreed level of exclusivity does not correlate with any unsecure attachment style. These findings reinforce that less exclusive non-monogamous relationships do not appear to be a general strategy to avoid attachment and closeness, but rather to be an alternative way to experience at least similar satisfaction as in monogamous relationships, aligning with previous studies (Rubel & Bogaert, 2014). The study further indicates no significant interaction between attachment styles and relationship exclusivity regarding relationship satisfaction. Interpreting these results, individuals with a high level of a given attachment style do not appear to be more satisfied in either monogamous or less exclusive relationships, setting aside the minor association between

exclusivity and satisfaction. Therefore, it may not be appropriate to specifically advise individuals with anxious or avoidant attachment styles to pursue monogamous or non-monogamous relationships based on the expectation of greater benefit.

It is important to note, however, that further research using longitudinal or sequential designs is needed to examine the directionality of the effects discussed and the impact of potential confounders. Nevertheless, this study contributes to challenging negative stereotypes about insecure attachment and lower satisfaction in CNM relationships. Therapists should be more informed about such results in order to avoid putting clients who are exploring CNM relationships under justification pressure or discouraging them from trying. In addition, attachment researchers should integrate these insights into their concepts of bonding to make attachment theory more inclusive, less biased, and more applicable to people in non-exclusive relationships. As Fern (2020) notes in her review, the most crucial aspect is to establish concrete relationship practices that foster attachment security and well-being. However, in less exclusive (e.g., polyamorous) relationship models, this requires the active acquisition and application of such practices, as the mononormative society offers little guidance for their successful implementation.

References

Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. N. (1978). *Patterns of attachment: A psychological study of the strange situation*. Erlbaum.

Ault, L. K., & Lee, A. (2016). Affective and interpersonal correlates of relationship satisfaction. *Philosophy Study*, *6*(3), 115–130. https://doi.org/10.17265/2159-5313/2016.03.001

Balzarini, R. N., Dharma, C., Kohut, T., Campbell, L., Lehmiller, J. J., Harman, J. J., & Holmes, B. M. (2019). Comparing relationship quality across different types of romantic partners in polyamorous and monogamous relationships. *Archives of Sexual Behavior*, *48*(6), 1749–1767. https://doi.org/10.1007/s10508-019-1416-7

Balzarini, R. N., & Muise, A. (2020). Beyond the dyad: A review of the novel insights gained from studying consensual non-monogamy. *Current Sexual Health Reports*, *12*(4), 398–404. https://doi.org/10.1007/S11930-020-00297-X

Barker, M. (2005). This is my partner, and this is my ... Partner's partner: Constructing a polyamorous identity in a monogamous world. *Journal of Constructivist Psychology*, *18*(1), 75–88. https://doi.org/10.1080/10720530590523107

Barker, M., & Langdridge, D. (2010). Whatever happened to non-monogamies? Critical reflections on recent research and theory. *Sexualities*, *13*(6), 748–772. https://doi.org/10.1177/1363460710384645

Bartholomew, K. (1990). Avoidance of intimacy: An attachment perspective. *Journal of Social and Personal Relationships*, *7*(2), 147–178. https://doi.org/10.1177/0265407590072001

Bates, D., Mächler, M., Bolker, B., & Walker, S. (2015). Fitting linear mixed-effects models using lme4. *Journal of Statistical Software*, *67*(1), 1–48. https://doi.org/10.18637/jss.v067.i01

Bergkvist, L., & Rossiter, J. R. (2007). The predictive validity of multiple-item versus single-item measures of the same constructs. *Journal of Marketing Research*, *44*(2), 175–184. https://doi.org/10.1509/jmkr.44.2.175

Bergstrand, C., & Williams, J. B. (2000). Today's alternative marriage styles: The case of swingers. *Electronic Journal of Human Sexuality*, *3*(10).

Bildungsstand. (2019). Statistisches Bundesamt. https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Bildung-Forschung-Kultur/Bildungsstand/_inhalt.html

BMFSFJ. (2016). Situation von trans- und intersexuellen Menschen im Fokus. *Begleitmaterial zur Interministeriellen Arbeitsgruppe Inter- & Transsexualität*, *5*.

Bonello, K., & Cross, M. C. (2009). Gay monogamy: I love you but I can't have sex with only you. *Journal of Homosexuality*, *57*(1), 117–139. https://doi.org/10.1080/00918360903445962

Bonevski, B., Randell, M., Paul, C., Chapman, K., Twyman, L., Bryant, J., Brozek, I., & Hughes, C. (2014). Reaching the hard-to-reach: A systematic review of strategies for improving health and medical research with socially disadvantaged groups. *BMC Medical Research Methodology*, *14*(1), 42. https://doi.org/10.1186/1471-2288-14-42

Bowlby, J. (1969). *Attachment and loss. Vol. 1: Attachment.* Basic Books.

Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: An integrative overview. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 46–76). Guilford Press.

Brennan, K. A., & Shaver, P. R. (1995). Dimensions of adult attachment, affect regulation, and romantic relationship functioning. *Personality and Social Psychology Bulletin*, *21*(3), 267–283. https://doi.org/10.1177/0146167295213008

Brüderl, J., Drobnič, S., Hank, K., Neyer, Franz. J., Walper, S., Wolf, C., Alt, P., Bauer, I., Böhm, S., Borschel, E., Bozoyan, C., Christmann, P., Edinger, R., Eigenbrodt, F., Garrett, M., Geissler, S., Gonzalez Avilés, T., Gröpler, N., Gummer, T., … Wetzel, M. (2023). *The German Family Panel (pairfam)* (14.0.0) [dataset]. GESIS. https://doi.org/10.4232/PAIRFAM.5678.14.0.0

Butzer, B., & Campbell, L. (2008). Adult attachment, sexual satisfaction, and relationship satisfaction: A study of married couples. *Personal Relationships*, *15*(1), 141–154. https://doi.org/10.1111/j.1475-6811.2007.00189.x

Byers, E. S. (2005). Relationship satisfaction and sexual satisfaction: A longitudinal study of individuals in long-term relationships. *The Journal of Sex Research*, *42*(2), 113–118. https://doi.org/10.1080/00224490509552264

Charny, I. W., & Parnass, S. (1995). The impact of extramarital relationships on the continuation of marriages. *Journal of Sex & Marital Therapy*, *21*(2), 100–115. https://doi.org/10.1080/00926239508404389

Chris Fraley, R. (2002). Attachment stability from infancy to adulthood: Meta-analysis and dynamic modeling of developmental mechanisms. *Personality and Social Psychology Review*, *6*(2), 123–151. https://doi.org/10.1207/S15327957PSPR0602_03

Conley, T. D., Matsick, J. L., Moors, A. C., & Ziegler, A. (2017). Investigation of consensually nonmonogamous relationships: Theories, methods, and new directions. *Perspectives on Psychological Science*, *12*(2), 205–232. https://doi.org/10.1177/1745691616667925

Conley, T. D., & Moors, A. C. (2014). More oxygen please!: How polyamorous relationship strategies might oxygenate marriage. *Psychological Inquiry*, *25*(1), 56–63. https://doi.org/10.1080/1047840X.2014.876908

Conley, T. D., Moors, A. C., Matsick, J. L., & Ziegler, A. (2013). The fewer the merrier?: Assessing stigma surrounding consensually non-monogamous romantic relationships. *Analyses of Social Issues and Public Policy*, *13*(1), 1–30. https://doi.org/10.1111/J.1530-2415.2012.01286.X

Conley, T. D., & Piemonte, J. L. (2021). Are there "better" and "worse" ways to be consensually non-monogamous (CNM)?: CNM types and CNM-specific predictors of dyadic adjustment. *Archives of Sexual Behavior*, *50*(4), 1273–1286. https://doi.org/10.1007/s10508-021-02027-3

Conley, T. D., Piemonte, J. L., Gusakova, S., & Rubin, J. D. (2018). Sexual satisfaction among individuals in monogamous and consensually non-monogamous relationships. *Journal of Social and Personal Relationships*, *35*(4), 509–531. https://doi.org/10.1177/0265407517743078

Cox, D. W., Fleckenstein, J. R., & Sims-Cox, L. R. (2021). Comparing the self-reported health, happiness, and marital happiness of a multinational sample of consensually non-monogamous adults with those of the U.S. general population: Additional comparisons by gender, number of sexual partners, frequency of sex, and marital status. *Archives of Sexual Behavior*, *50*(4), 1287–1309. https://doi.org/10.1007/s10508-021-01973-2

Cozzarelli, C., Karafa, J. A., Collins, N. L., & Tagler, M. J. (2003). Stability and change in adult attachment styles: Associations with personal vulnerabilities, life events. and global

construals of self and others. *Journal of Social and Clinical Psychology*, *22*(3), 315–346. https://doi.org/10.1521/jscp.22.3.315.22888

Ehrenthal, J. C., Zimmermann, J., Brenk-Franz, K., Dinger, U., Schauenburg, H., Brähler, E., & Strauß, B. (2021). Evaluation of a short version of the Experiences in Close Relationships-Revised Questionnaire (ECR-RD8): Results from a representative German sample. *BMC Psychology*, *9*(1), 140. https://doi.org/10.1186/s40359-021-00637-z

Falconier, M. K., Nussbeck, F., Bodenmann, G., Schneider, H., & Bradbury, T. (2015). Stress from daily hassles in couples: Its effects on intradyadic stress, relationship satisfaction, and physical and psychological well-being. *Journal of Marital and Family Therapy*, *41*(2), 221–235. https://doi.org/10.1111/jmft.12073

Feeney, J. A. (2002). Attachment, marital interaction, and relationship satisfaction: A diary study. *Personal Relationships*, *9*(1), 39–55. https://doi.org/10.1111/1475-6811.00003

Feeney, J. A., Noller, P., & Callan, V. J. (1994). Attachment style, communication and satisfaction in the early years of marriage. In *Attachment processes in adulthood* (pp. 269–308). Jessica Kingsley Publishers.

Feeney, J. A., Noller, P., & Roberts, N. (1996). Chapter 18—Emotion, attachment, and satisfaction in close relationships. In P. A. Andersen & L. K. Guerrero (Eds.), *Handbook of Communication and Emotion* (pp. 473–505). Academic Press. https://doi.org/10.1016/B978-012057770-5/50020-5

Fern, J. (2020). *Polysecure: Attachment, Trauma and Consensual Nonmonogamy*. Thorntree Press LLC.

Ferrer, J. N. (2018). Mononormativity, polypride, and the "Mono–Poly Wars." *Sexuality & Culture*, *22*(3), 817–836. https://doi.org/10.1007/s12119-017-9494-y

Fife, S. T., Weeks, G. R., & Stellberg-Filbert, J. (2013). Facilitating forgiveness in the treatment of infidelity: An interpersonal model. *Journal of Family Therapy*, *35*(4), 343–367. https://doi.org/10.1111/j.1467-6427.2011.00561.x

Finkel, E. J., Hui, C. M., Carswell, K. L., & Larson, G. M. (2014). The suffocation of marriage: climbing mount Maslow without enough oxygen. *Psychological Inquiry*, *25*(1), 1–41. https://doi.org/10.1080/1047840X.2014.863723

Fletcher, G. J. O. (2015). Accuracy and bias of judgments in romantic relationships. *Current Directions in Psychological Science*, *24*(4), 292–297. https://doi.org/10.1177/0963721415571664

Flicker, S. M., Sancier-Barbosa, F., Moors, A. C., & Browne, L. (2021). A closer look at relationship structures: Relationship satisfaction and attachment among people who practice hierarchical and non-hierarchical polyamory. *Archives of Sexual Behavior*, *50*(4), 1401–1417. https://doi.org/10.1007/S10508-020-01875-9/TABLES/8

Flicker, S. M., Thouin-Savard, M. I., & Vaughan, M. D. (2022). Factors that facilitate and hinder the experience of compersion among individuals in consensually non-monogamous relationships. *Archives of Sexual Behavior*, *51*(6), 3035–3048. https://doi.org/10.1007/S10508-022-02333-4/TABLES/2

Flicker, S. M., Vaughan, M. D., & Meyers, L. S. (2021). Feeling good about your partners' relationships: Compersion in consensually non-monogamous relationships. *Archives of Sexual Behavior*, *50*(4), 1569–1585. https://doi.org/10.1007/S10508-021-01985-Y/FIGURES/2

Fraley, R. C., Heffernan, M. E., Vicary, A. M., & Brumbaugh, C. C. (2011). The experiences in close relationships—Relationship Structures Questionnaire: A method for assessing

attachment orientations across relationships. *Psychological Assessment*, *23*(3), 615–625. https://doi.org/10.1037/a0022898

Fraley, R. C., Hudson, N. W., Heffernan, M. E., & Segal, N. (2015). Are adult attachment styles categorical or dimensional? A taxometric analysis of general and relationship-specific attachment orientations. *Journal of Personality and Social Psychology*, *109*(2), 354–368. https://doi.org/10.1037/pspp0000027

Fraley, R. C., & Waller, N. G. (1998). Adult attachment patterns: A test of the typological model. In *Attachment theory and close relationships* (pp. 77–114). The Guilford Press.

Fraley, R. C., Waller, N. G., & Brennan, K. A. (2000). An item response theory analysis of self-report measures of adult attachment. *Journal of Personality and Social Psychology*, *78*(2), 350–365. https://doi.org/10.1037/0022-3514.78.2.350

Fricker, J., & Moore, S. (2002). Relationship satisfaction: The role of love styles and attachment styles. *Current Research in Social Psychology*, *7*(11).

Funk, J. L., & Rogge, R. D. (2007). Testing the ruler with item response theory: Increasing precision of measurement for relationship satisfaction with the Couples Satisfaction Index. *Journal of Family Psychology*, *21*(4), 572–583. https://doi.org/10.1037/0893-3200.21.4.572

Gonin-Spahni, S., Borgmann, M., Gloor, S., & Znoj, H. (2019). *Sexualität Beziehung Gesundheit* (Informationen Zum Projekt SeBeGe) [SeBeGe Newsletter]. Institut für Psychologie der Universität Bern. https://boris.unibe.ch/138794/1/SeBeGe-Newsletter_August2019.pdf

Griffin, D., & Bartholomew, K. (1994). Models of the self and other: Fundamental dimensions underlying measures of adult attachment. *Journal of Personality and Social Psychology*, *67*(3), 430–445.

Grunt-Mejer, K., & Campbell, C. (2016). Around consensual nonmonogamies: Assessing attitudes toward nonexclusive relationships. *The Journal of Sex Research*, *53*(1), 45–53. https://doi.org/10.1080/00224499.2015.1010193

Guerrero, L. K., Hannawa, A. F., & Babin, E. A. (2011). The communicative responses to jealousy scale: Revision, empirical validation, and associations with relational satisfaction. *Communication Methods and Measures*, *5*(3), 223–249. https://doi.org/10.1080/19312458.2011.596993

Hammond, J. R., & Fletcher, G. J. O. (1991). Attachment styles and relationship satisfaction in the development of close relationships. *New Zealand Journal of Psychology*, *20*, 56–62.

Harviainen, J. T., & Frank, K. (2018). Group sex as play: Rules and transgression in shared non-monogamy. *Games and Culture*, *13*(3), 220–239. https://doi.org/10.1177/1555412016659835

Haupert, M. L., Gesselman, A. N., Moors, A. C., Fisher, H. E., & Garcia, J. R. (2016). Prevalence of experiences with consensual nonmonogamous relationships: Findings from two national samples of single Americans. *Journal of Sex & Marital Therapy*, *43*(5), 424–440. https://doi.org/10.1080/0092623X.2016.1178675

Hazan, C., & Shaver, P. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology*, *52*(3), 511–524. https://doi.org/10.1037/0022-3514.52.3.511

Holland, A. S., Fraley, R. C., & Roisman, G. I. (2012). Attachment styles in dating couples: Predicting relationship functioning over time. *Personal Relationships*, *19*(2), 234–246. https://doi.org/10.1111/j.1475-6811.2011.01350.x

Holm, S. (1979). A simple sequentially rejective multiple test procedure. *Scandinavian Journal of Statistics*, *6*(2), 65–70.

Ka, W. L., Bottcher, S., & Walker, B. R. (2020). Attitudes toward consensual non-monogamy predicted by sociosexual behavior and avoidant attachment. *Current Psychology*, *41*(7), 4312–4320. https://doi.org/10.1007/s12144-020-00941-8

Karney, B. R., & Coombs, R. H. (2000). Memory bias in long-term close relationships: Consistency or improvement? *Personality and Social Psychology Bulletin*, *26*(8), 959–970. https://doi.org/10.1177/01461672002610006

Lai, M. H. C. (2021). Bootstrap confidence intervals for multilevel standardized effect size. *Multivariate Behavioral Research*, *56*(4), 558–578. https://doi.org/10.1080/00273171.2020.1746902

Lecuona, O., Suero, M., Wingen, T., & De Rivas, S. (2021). Does “open” rhyme with “special”? Comparing personality, sexual satisfaction, dominance and jealousy of monogamous and non-monogamous practitioners. *Archives of Sexual Behavior*, *50*(4), 1537–1549. https://doi.org/10.1007/s10508-020-01865-x

Leiner, D. J. (2019). Too fast, too straight, too weird: Non-reactive indicators for meaningless data in Internet surveys. *Journal of the European Survey Research Association*, *13*(3), 229-248 Pages. https://doi.org/10.18148/SRM/2019.V13I3.7403

Li, T., & Chan, D. K. (2012). How anxious and avoidant attachment affect romantic relationship quality differently: A meta-analytic review. *European Journal of Social Psychology*, *42*(4), 406–419. https://doi.org/10.1002/ejsp.1842

Maas, C. J. M., & Hox, J. J. (2004). Robustness issues in multilevel regression analysis. *Statistica Neerlandica*, *58*(2), 127–137. https://doi.org/10.1046/j.0039-0402.2003.00252.x

Maas, C. J. M., & Hox, J. J. (2005). Sufficient Sample Sizes for Multilevel Modeling. *Methodology*, *1*(3), 86–92. https://doi.org/10.1027/1614-2241.1.3.86

Malouff, J. M., Thorsteinsson, E. B., Schutte, N. S., Bhullar, N., & Rooke, S. E. (2010). The Five-Factor Model of personality and relationship satisfaction of intimate partners: A meta-analysis. *Journal of Research in Personality*, *44*(1), 124–127. https://doi.org/10.1016/j.jrp.2009.09.004

Meyers, S. A., & Landsberger, S. A. (2002). Direct and indirect pathways between adult attachment style and marital satisfaction. *Personal Relationships*, *9*(2), 159–172. https://doi.org/10.1111/1475-6811.00010

Mitchell, M. E., Bartholomew, K., & Cobb, R. J. (2014). Need fulfillment in polyamorous relationships. *The Journal of Sex Research*, *51*(3), 329–339. https://doi.org/10.1080/00224499.2012.742998

Mogilski, J. K., Reeve, S. D., Nicolas, S. C. A., Donaldson, S. H., Mitchell, V. E., & Welling, L. L. M. (2019). Jealousy, consent, and compersion within monogamous and consensually non-monogamous romantic relationships. *Archives of Sexual Behavior*, *48*(6), 1811–1828. https://doi.org/10.1007/S10508-018-1286-4/TABLES/4

Moors, A. C. (2016). Has the american public's interest in information related to relationships beyond "The Couple" increased over time? *The Journal of Sex Research*, *54*(6), 677–684. https://doi.org/10.1080/00224499.2016.1178208

Moors, A. C., Conley, T. D., Edelstein, R. S., & Chopik, W. J. (2015). Attached to monogamy? Avoidance predicts willingness to engage (but not actual engagement) in consensual non-monogamy. *Journal of Social and Personal Relationships*, *32*(2), 222–240. https://doi.org/10.1177/0265407514529065

Moors, A. C., Gesselman, A. N., & Garcia, J. R. (2021). Desire, familiarity, and engagement in polyamory: Results from a national sample of single adults in the United States. *Frontiers in Psychology*, *12*, 619640. https://doi.org/10.3389/fpsyg.2021.619640

Moors, A. C., Matsick, J. L., Ziegler, A., Rubin, J. D., & Conley, T. D. (2013). Stigma toward individuals engaged in consensual nonmonogamy: Robust and worthy of additional research. *Analyses of Social Issues and Public Policy*, *13*(1), 52–69. https://doi.org/10.1111/asap.12020

Moors, A. C., Schechinger, H. A., Balzarini, R., & Flicker, S. (2021). Internalized consensual non-monogamy negativity and relationship quality among people engaged in polyamory, swinging, and open relationships. *Archives of Sexual Behavior*, *50*(4), 1389–1400. https://doi.org/10.1007/S10508-020-01885-7

Nakagawa, S., & Schielzeth, H. (2013). A general and simple method for obtaining R2 from generalized linear mixed-effects models. *Methods in Ecology and Evolution*, *4*(2), 133–142. https://doi.org/10.1111/j.2041-210x.2012.00261.x

Nezlek, J. B. (2012). Multilevel modeling for psychologists. In *APA handbook of research methods in psychology, Vol 3: Data analysis and research publication* (pp. 219–241). American Psychological Association. https://doi.org/10.1037/13621-011

O'Brien, R. M. (2007). A caution regarding rules of thumb for Variance Inflation Factors. *Quality & Quantity*, *41*(5), 673–690. https://doi.org/10.1007/s11135-006-9018-6

Patrick, H., Knee, C. R., Canevello, A., & Lonsbary, C. (2007). The role of need fulfillment in relationship functioning and well-being: A self-determination theory perspective. *Journal of Personality and Social Psychology*, *92*(3), 434–457. https://doi.org/10.1037/0022-3514.92.3.434

Pinquart, M., Feußner, C., & Ahnert, L. (2013). Meta-analytic evidence for stability in attachments from infancy to early adulthood. *Attachment & Human Development*, *15*(2), 189–218. https://doi.org/10.1080/14616734.2013.746257

Ritchie, A., & Barker, M. (2006). "There aren't words for what we do or how we feel so we have to make them up": Constructing polyamorous languages in a culture of compulsory monogamy. *Sexualities*, *9*(5), 584–601. https://doi.org/10.1177/1363460706069987

Rothmüller, B. (2021). The grip of pandemic mononormativity in Austria and Germany. *Culture, Health & Sexuality*, *23*(11), 1573–1590. https://doi.org/10.1080/13691058.2021.1943534

Rubel, A. N., & Bogaert, A. F. (2014). Consensual nonmonogamy: Psychological well-being and relationship quality correlates. *The Journal of Sex Research*, *52*(9), 961–982. https://doi.org/10.1080/00224499.2014.942722

Rubin, J. D., Moors, A. C., Matsick, J. L., Ziegler, A., & Conley, T. D. (2014). On the margins: Considering diversity among consensually non-monogamous relationships. *Journal Für Psychologie*, *22*(1), 19–37.

Rubinsky, V. (2019). Identity gaps and jealousy as predictors of satisfaction in polyamorous relationships. *Southern Communication Journal*, *84*(1), 17–29. https://doi.org/10.1080/1041794X.2018.1531916

Saavedra, M. C., Chapman, K. E., & Rogge, R. D. (2010). Clarifying links between attachment and relationship quality: Hostile conflict and mindfulness as moderators. *Journal of Family Psychology*, *24*(4), 380–390. https://doi.org/10.1037/a0019872

Schechinger, H. A., Sakaluk, J. K., & Moors, A. C. (2018). Harmful and helpful therapy practices with consensually non-monogamous clients: Toward an inclusive framework. *Journal of Consulting and Clinical Psychology*, *86*(11), 879–891. https://doi.org/10.1037/ccp0000349

Schmidt, S., Strauß, B., Höger, D., & Brähler, E. (2004). Die Adult Attachment Scale (AAS)—Teststatistische Prüfung und Normierung der deutschen Version. *PPmP - Psychotherapie · Psychosomatik · Medizinische Psychologie*, *54*(9/10), 375–382. https://doi.org/10.1055/s-2003-815000

Schoenfeld, E. A., Loving, T. J., Pope, M. T., Huston, T. L., & Štulhofer, A. (2017). Does sex really matter? Examining the connections between spouses' nonsexual behaviors, sexual frequency, sexual satisfaction, and marital satisfaction. *Archives of Sexual Behavior*, *46*(2), 489–501. https://doi.org/10.1007/s10508-015-0672-4

Scoats, R., & Campbell, C. (2022). What do we know about consensual non-monogamy? *Current Opinion in Psychology*, *48*, 101468–101468. https://doi.org/10.1016/J.COPSYC.2022.101468

Séguin, L. J. (2019). The good, the bad, and the ugly: Lay attitudes and perceptions of polyamory. *Sexualities*, *22*(4), 669–690. https://doi.org/10.1177/1363460717713382

Shaver, P. R., & Brennan, K. A. (1992). Attachment styles and the "Big Five" personality traits: Their connections with each other and with romantic relationship outcomes. *Personality*

and Social Psychology Bulletin, *18*(5), 536–545. https://doi.org/10.1177/0146167292185003

Shieh, G. (2011). Clarifying the role of mean centring in multicollinearity of interaction effects. *British Journal of Mathematical and Statistical Psychology*, *64*(3), 462–477. https://doi.org/10.1111/j.2044-8317.2010.02002.x

Smyth, A. P. J., Peetz, J., & Capaldi, A. A. (2020). Ex-appraisal bias: Negative illusions in appraising relationship quality retrospectively. *Journal of Social and Personal Relationships*, *37*(5), 1673–1680. https://doi.org/10.1177/0265407520907150

Thouin-Savard, M. (2021). *Compersion in consensually nonmonogomy*. California Institute of Integral Studies.

Towler, A. J., & Stuhlmacher, A. F. (2013). Attachment styles, relationship satisfaction, and well-being in working women. *The Journal of Social Psychology*, *153*(3), 279–298. https://doi.org/10.1080/00224545.2012.735282

Træen, B., & Thuen, F. (2022). Non-consensual and consensual non-monogamy in Norway. *International Journal of Sexual Health*, *34*(1), 65–80. https://doi.org/10.1080/19317611.2021.1947931

Vilkin, E., & Davila, J. (2023). Characteristics of relationship agreements and associations with relationship functioning among people with diverse relationship structures. *Journal of Social and Personal Relationships*, *40*(8), 2660–2682. https://doi.org/10.1177/02654075231157772

Zandt, F. (2023, May 16). *Wer sich in Deutschland als LGBTQA+ identifiziert*. Statista Daily Data. https://de.statista.com/infografik/27440/anteil-der-befragten-die-ihre-sexuelle-orientierung-wie-folgt-angeben-nach-geburtsjahr

Zengel, B., Lee, E. M., Walker, W. R., & Skowronski, J. J. (2019). Romantic relationships and fading of affect for memories of the shared past. *Applied Cognitive Psychology*, *33*(5), 861–872. https://doi.org/10.1002/acp.3527

Zimmermann, J., Altenstein, D., Krieger, T., Holtforth, M. G., Pretsch, J., Alexopoulos, J., Spitzer, C., Benecke, C., Krueger, R. F., Markon, K. E., & Leising, D. (2014). The structure and correlates of self-reported *DSM-5* maladaptive personality traits: Findings from two German-speaking samples. *Journal of Personality Disorders*, *28*(4), 518–540. https://doi.org/10.1521/pedi_2014_28_130

Appendix

Appendix A: Preregistration on August 24, 2023

1) Have any data been collected for this study already?
No, no data have been collected for this study yet.

2) What's the main question being asked or hypothesis being tested in this study?
The study aims to investigate the predictive relationship between attachment styles, regarded as relatively stable personality variables, and the degree of concurred sexual and emotional exclusivity in relationships (differentiated operationalizations of monogamous and non-monogamous relationships), with respect to the level of satisfaction within distinct romantic relationships. Additionally, a focal point of interest lies in examining whether attachment styles moderate the association between exclusivity agreements and satisfaction in these relationships.
According to Attachment Theory (Bowlby, 1969; Hazan & Shaver, 1987), early interactions with primary attachment figures, typically parents during childhood, culminate in the formation of attachment styles. These internal working models encapsulate expectations and patterns for acquiring love, closeness, and attention from our attachment figures, thereby shaping our experiences and behaviors in adult romantic relationships (Hazan & Shaver, 1987). Considering the ongoing societal and clinical discourse surrounding the possibility of non-monogamous relationships being employed as mechanisms to avoid intimacy and attachment (Conley et al., 2013; Ka et al., 2020; Moors et al., 2013; Moors, Schechinger, et al., 2021), this exploration takes on added significance in shedding light on the role of attachment styles in influencing relationship satisfaction across varying exclusivity arrangements.

To address this question, an online survey will be conducted, which will inquire about the exclusivity agreement and satisfaction in several of the participants' romantic relationships. Additionally, the study will assess each participant's "anxious" and "avoidant" attachment styles.
A multilevel model will be employed to examine the associations between the attachment styles of each person, the exclusivity agreement, and the satisfaction within each relationship. At Level 1, differences in relationships within an individual are accounted for, while variances between individuals can be described at Level 2.

Hypothesis 1 (H1): First, the assumption is made that individuals experience comparable levels of satisfaction in their relationships (lvl-1) characterized by lower exclusivity compared to relationships with higher levels of exclusivity (lvl-1).

Hypothesis 2 (H2): Next, it is anticipated that individuals higher in anxious (H2a) and avoidant (H2b) attachment styles (lvl-2) have a lower satisfaction in their relationships (lvl-1).
Furthermore, due to the following previous findings, an investigation will be conducted into the extent to which an individual's attachment styles at Level 2 are related to their average level of exclusivity agreement:
The avoidant attachment style predicts a more positive attitude toward consensual non-monogamy and the desire to engage in such relationships, but not the actual involvement in consensual non-monogamous relationships. On the other hand, the anxious attachment style is associated with more negative attitudes toward consensual non-monogamous relationships, but it neither predicts willingness nor engagement in such relationships (Moors et al., 2015, 2017).

Hypothesis 3 (H3): Based on these findings, it is hypothesized that neither the avoidant (H3a) nor the anxious (H3b) attachment style (lvl-2) is related to the exclusivity agreement (lvl-1).
Assuming that attachment styles are relatively stable internal working models, it seems to be particularly relevant to investigate the moderation effect:

Hypothesis 4 (H4): The moderation analysis examines whether the manifestations of avoidant (H4a) and anxious (H4b) attachment styles (lvl-2) influence the association between relationship exclusivity (lvl-1) and relationship satisfaction (lvl-1) in a beneficial or detrimental way.

3) Describe the key (dependent) variable(s) specifying how they will be measured.
The dependent variable, relationship satisfaction, will be evaluated employing an single item sourced from the Couples Satisfaction Index (CSI; Funk & Rogge, 2007). Respondents will indicate their level of satisfaction on a seven-point Likert scale that spans from "extremely unhappy" to "perfect." The item inquires, "Wie glücklich sind Sie mit der Beziehung im Durchschnitt gewesen?" (English: "Please indicate the degree of happiness, all things considered, of your relationship?").

The level-1 predictor "relationship exclusivity" will be assessed using the question "Welche Vereinbarung, ob ausdrücklich oder stillschweigend, hat am ehesten oder die meiste Zeit über zwischen Ihnen und Ihrer Partnerperson bezüglich sexueller und romantischer Kontakte mit anderen Personen bestanden?" (English: "What agreement, whether explicit or implicit, has mostly or most of the time been in place between you and your partner regarding sexual and romantic contacts with other individuals?"). Respondents can select from five different levels:

1. "Excluded (e.g., in monogamous relationships)"
2. "Allowed under strict conditions or exceptions (e.g., swinging; only together with the partner)"
3. "Allowed under specific conditions (e.g., in open relationships; predominantly sexual contacts or only with specific individuals or situations)"
4. "Allowed with few conditions (e.g., hierarchical polyamory; sexual and romantic contacts with other individuals)"
5. "Unconditionally allowed (e.g., non-hierarchical polyamory; possible with all individuals at any time)."

The level-2 predictor "Attachment Styles" will be measured using the German version of the Adult Attachment Scale (AAS; Schmidt et al., 2004). The two distinct styles, anxious and avoidant, will be captured through 15 items.

As a covariate, the consideration of whether the relationship is already terminated or still ongoing will be included as “relationship status” to control for potential biases stemming from this aspect.

4) How many and which conditions will participants be assigned to?
This study is a correlational cross-sectional study. It involves two samples, a student sample and a community sample, all of whom will receive the same set of questions related to the relevant variables of this study. Our intention is to analyze the samples together in this study.

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.
We will employ a multilevel analysis to test the hypotheses described above. Relationship satisfaction (outcome variable) and the degree of relationship exclusivity (predictor variable) are both Level-1 variables (for each individual relationship) and Attachment styles will serve as Level-2 predictors, capturing variances among participants.
For testing H1, a multilevel model predicting relationship satisfaction (lvl-1) by relationship exclusivity (lvl-1) will be used, with the relationship status included as a covariate.
For testing H2, a multilevel model predicting relationship satisfaction (lvl-1) by attachment styles (lvl-2) will be used, with the relationship status included as a covariate.
For testing H3, a multilevel model predicting relationship exclusivity (lvl-1) by attachment styles (lvl-2) will be used, with the relationship status included as a covariate.
For testing H4, a multilevel model predicting relationship satisfaction (lvl-1) by relationship exclusivity (lvl-1), attachment styles (lvl-2), and their cross-level-interaction will be used, with the covariate relationship status.
The models will encompass both manifestations of attachment, (i.e. avoidance and anxiety).
Statistical Inferences regarding parameter estimates will be based on parametric bootstrap.

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.
Subjects under 18 are excluded from the outset.
And Participants who did not conscientiously engage with the study are excluded based on the following criteria:

- According to the scores generated by SoSci: TIME_RSI > 2, indicating unrealistically fast responding on single pages.

- Participants who incorrectly answered the Instructed Response Item in the AAS questionnaire: "Please select the option ‘Does not apply very well’ to demonstrate that you read the tasks attentively."
- Or if they selected "No" at the end of the study in response to the question: "Did you diligently complete the questionnaire so that we can use this data for scientific analysis?"

7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.
We will be collecting data over the course of one month, with the final sample size contingent upon the number of participants who have taken part in the study up to that point. We anticipate a cohort of approximately 100 participants from the university and a minimum of 150 participants from the community sample. The quantity of observations at Level 1 will be contingent upon the number of relationships reported per individual. University participants will be asked to provide information about 4 relationships each, while the community sample is expected to provide details about approximately 2 relationships per participant. As a result, we project a minimum of 700 observations at Level 1 and a minimum of 250 observations at Level 2.
(According to Maas and Hox (2005), a minimum of 100 observations should be measured at Level 2 to obtain reliable estimates of standard errors if violations of the normal distribution assumption at Level 2 are present, which cannot be ruled out for the planned study.)

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)
Different measurements of attachment styles:
To address the research inquiries, this study will employ the Adult Attachment Scale by Schmidt and colleagues (2004) as the operationalization of attachment styles. This well-validated instrument will be prioritized for its focus on general and stable attachment styles, independent of specific relationships, in contrast to the commonly used Experiences in Close Relationships-Revised questionnaire (ECR-RD8; Ehrenthal et al., 2021). However, we will also collect the ECR-RD8 and two facets of the PID-5 (Zimmermann et al., 2014), namely "Separation Anxiety" and "Fear of Intimacy", to potentially conduct an exploratory robustness check of the results concerning the above research question in this or a subsequent paper.

Dependent variable with additional indicators:
Furthermore, an additional analysis in this or a subsequent paper could explore whether the results hold when the dependent variable "relationship satisfaction" is measured through an index score derived from various emotions related to the relationship. Participants will be asked to indicate how frequently (on a six-point Likert scale ranging from "never" to "always") the partner triggered the following emotion categories in the index person during the relationship: “Wut oder Genervtsein” (Engl.: anger or annoyance), "Stress oder Sorge" (stress or worry), "Gelassenheit oder Ruhe " (calmness or peace), "Dankbarkeit oder Wertschätzung" (gratitude or thankfulness), "Traurigkeit oder Entmutigung" (sadness or discouragement), "Verwirrung oder Überraschung" (confusion or perplexity), "Freude oder Euphorie " (joy or euphoria). These categories were selected based on structural analyses of emotions within daily life by Chung and colleagues (FEEELS-FC, 2022), and emotions deemed relevant to romantic relationships.
Using a bifactor exploratory factor analysis (Bifactor-EFA), potential calculations will be examined utilizing an unweighted aggregate of these items (e.g., mean) based on their loadings onto a general factor, representing relationship satisfaction.

Two distinct samples:
Data will be collected in a student sample from the University of Kassel and a sample primarily recruited from the polyamory community. The questions pertaining to the variables relevant to this study will be consistent across both samples. In the student sample, participants are likely to report multiple relationships per person (approximately 4), whereas in the community sample, for practical reasons, participants will have the option to end the survey after reporting two or three relationships. Moreover, the student sample will also include additional personality measures, which are not part of this study.
For the purposes of this study, both samples will be combined, and exploratory analyses in this or a subsequent paper may be conducted to investigate potential differences between the two samples.

Appendix B: Information on Data Usage and Privacy for the German Student Sample

Allgemeine Information für Teilnehmende

Im Folgenden informieren wir Sie über den datenschutzrechtskonformen Umgang mit Ihren personenbezogenen Daten und bitten um Ihre Zustimmung zur Teilnahme an unserer Studie sowie zur Verwendung Ihrer Daten für die angegebenen Zwecke. Bitte lesen Sie die folgenden Erklärungen sorgfältig durch. Bei Rückfragen können Sie sich gerne bei dem Projektverantwortlichen melden.

Ablauf der Studie

Mit diesem Forschungsvorhaben untersuchen wir Zusammenhänge zwischen Persönlichkeit und Erleben und Verhalten in monogamen und nicht-monogamen Beziehungen. Mit Ihrer Teilnahme werden Sie zunächst darum gebeten, Angaben zu Ihrer eigenen Person zu machen (wie z.B., Alter, Geschlecht). Anschließend werden Sie darum gebeten, Fragen zu Ihren Erfahrungen in konkreten romantischen Beziehungen zu beantworten, insbesondere zu Ihrem persönlichen Erleben und Verhalten. Außerdem gibt es Fragen, in denen Sie gebeten werden, die Erlebens- und Verhaltensweisen von aktuellen oder ehemaligen Partnerpersonen einzuschätzen. Zuletzt bearbeiten Sie verschiedene Fragebögen, in denen Sie beurteilen, inwiefern bestimmte Aussagen zu Erlebens- und Verhaltensweisen im Allgemeinen auf Sie zutreffen.

Die Studienteilnahme dauert voraussichtlich 55 Minuten. Bis auf wenige Ausnahmen müssen alle Fragen vollständig beantwortet werden, um die Studie erfolgreich abzuschließen.

Vergütung

Für Ihre vollständige Teilnahme erhalten Sie 1 Versuchspersonenstunde über SONA.

Freiwilligkeit und Anonymität

Die Teilnahme an der Studie ist freiwillig. Sie können jederzeit und ohne Angabe von Gründen die Teilnahme an dieser Studie beenden, ohne dass Ihnen daraus Nachteile entstehen. Versuchspersonenstunden werden jedoch ausschließlich für abgeschlossene Teilnahmen vergeben.

Datenschutz

Die Studienteilnahme erfolgt für Sie vollständig anonym, d.h. dass Ihre Angaben in der Studie Ihrer Person nicht zugeordnet werden können. Bitte beachten Sie, dass daher nach Ihrer vollendeten Teilnahme keine Löschung oder Korrektur Ihrer Daten bzw. eine Zurücknahme der Einwilligung zur Verarbeitung Ihrer Daten möglich ist.
Ihre Angaben werden zu Forschungszwecken weiterverwendet. Dazu werden die vollständig anonymen Daten mindestens 10 Jahre nach Datenauswertung, bzw. mindestens 10 Jahre nach Erscheinen einer Publikation zu dieser Studie aufbewahrt. Die Ergebnisse und Daten dieser Umfrage werden als wissenschaftliche Publikation veröffentlicht. Die Daten dieser Umfrage werden als offene Daten in vollständig anonymisierter Form in einem sicheren, internetbasierten Datenarchiv (z.B. OSF, ZPID, GESIS etc.) zugänglich gemacht. Nicht öffentlich zugänglich gemacht werden die Daten zu Alter, Geschlecht, und sexueller Orientierung. Somit bleibt gewährleistet, dass die Daten keinen Personen zugeordnet werden können.

Wenn Sie mit unserem Vorhaben einverstanden sind, können Sie auf der nächsten Seite Ihr Einverständnis geben.

Appendix C: Divergent Information for the German Community Sample

Allgemeine Information für Teilnehmende

[the same as in Appendix B]

Ablauf der Studie

[the same as in Appendix B]

Die Teilnahme an der Studie wird etwa 15-20 Minuten in Anspruch nehmen.

Freiwilligkeit und Anonymität

[the same as in Appendix B]

Dankeschön

Als Dankeschön können Sie eine kostenlose Einzel- oder Paarberatungsstunde für bedürfnisorientierte und vielfältige Beziehungen gewinnen. Dazu können Sie am Ende Ihre E-Mail eintragen.

Wichtig: Die Verlosung und das Beratungsangebot steht in keinem Zusammenhang mit der Universität Kassel - die Verantwortung liegt bei Moritz Hofmann. Außerdem wird bei der Angabe Ihrer E-Mail Ihre Anonymität vollständig gewahrt, indem sie direkt auf dem Server von SoSci-Survey unabhängig von Ihren zuvor beantworteten Fragen abgespeichert wird. Somit ist keinerlei Zusammenhang zwischen Ihrer E-Mail und ihren Antworten herzustellen und Ihre Email-Adresse wird im Anschluss an die Verlosung wieder gelöscht.

Außerdem können Sie auf Wunsch eine Zusammenfassung der Studie erhalten und/oder sich am Ende auf eine Kontaktliste für Psychologische Poly- und Paarberatung setzen. *Auch hier wird Ihre Anonymität wie im Absatz zuvor beschrieben vollständig gewahrt.*

Datenschutz

[the same as in Appendix B]

Appendix D: Continuous Measurement of Relationship Exclusivity in German

Frage: **Welche Vereinbarung, ob ausdrücklich oder stillschweigend, hat am ehesten oder die meiste Zeit über zwischen Ihnen und Ihrer Partnerperson bezüglich sexueller und romantischer Kontakte mit anderen Personen bestanden?**

Hinweis: Wenn Sie unsicher sind, wählen Sie bitte die Antwort, die Ihrer Situation am ehesten entspricht.

Antwortmöglichkeiten:

Sexuelle und romantische Kontakte mit anderen Personen waren …

[Drop-Down-Auswahlmenü]

- ausgeschlossen (z.B. in monogamen Beziehungen)
- unter strengen Bedingungen oder in Ausnahmen erlaubt (z.B. Swinging; nur zusammen mit der Partnerperson)
- unter bestimmten Bedingungen erlaubt (z.B. in offenen Beziehungen; eher nur sexuelle Kontakte oder nur mit bestimmten Personen oder in bestimmten Situationen)
- mit wenigen Bedingungen erlaubt (z.B. hierarchische Polyamorie; sexuelle und romantische Kontakte mit anderen Personen)
- bedingungslos erlaubt (z.B. nicht-hierarchische Polyamorie; mit allen Personen jederzeit möglich)

Appendix E: Post Hoc Analysis of Monogamous vs. Combined CNM Groups Predicting Relationship Satisfaction

Table E1

Multilevel Analysis Comparing Monogamous and All CNMs Together Predicting Relationship Satisfaction

Predictors	*b* [95% CI[a]]	*SE*[a]	*Std. Beta*
(Intercept)	4.96 [4.83, 5.08]	0.07	0.53
Relationship status (ended)	-1.44 [-1.59, -1.34]	0.07	-1.11
CNM – mono[b]	0.05 [-0.03, 0.24]	0.07	0.08

Note. N = 1159 observations, N = 497 subjects. σ^2 (between-person) = 0.06 (*SD* = 0.24); σ^2 (within-person) = 1.12 (*SD* = 1.06); ICC = 0.05. R^2 (marginal / conditional) = .321 / .355.

[a] Confidence intervals and standard errors via bootstrapping (1000 samples).

[b] CNM relationships combined for comparison against the monogamous group.

Appendix F: Post Hoc Analysis of Monogamous vs. Various CNM Groups Predicting Relationship Satisfaction

Table F1

Multilevel Analysis Comparing Monogamous and CNM Groups Predicting Relationship Satisfaction

Predictors	*b* [95% CI[a]]	*SE*[a]	*Std. Beta*
(Intercept)	4.96 [4.83, 5.08]	0.07	0.53
Relationship status (ended)	-1.44 [-1.57, -1.31]	0.07	-1.10
Swinger – mono[b]	0.12 [-0.19, 0.43]	0.16	0.09
Open relationship – mono[b]	-0.07 [-0.26, 0.12]	0.10	-0.05
Hierarchical polyamorous – mono[b]	0.16 [-0.03, 0.35]	0.10	0.12
Non-hierarchical polyamorous – mono[b]	0.21 [0.04, 0.38]	0.09	0.16

Note. N = 1159 observations, N = 497 subjects. σ^2 (between-person) = 0.05 (*SD* = 0.22); σ^2 (within-person) = 1.12 (*SD* = 1.06); ICC = 0.04. R^2 (marginal / conditional) = .325 / .353.

[a] Confidence intervals and standard errors via bootstrapping (1000 samples).

[b] Monogamous group served as the reference group in each case.

Appendix G: Post Hoc Separate Analyses of Attachment Styles Predicting Relationship Satisfaction

Table G1

Multilevel Analysis of Anxious Attachment Predicting Relationship Satisfaction

Predictors	*b* [95% CI[a]]	*SE*[a]	*Std. Beta*
(Intercept)	5.43 [5.22, 5.64]	0.11	0.59
Relationship status (ended)	-1.49 [-1.61, -1.36]	0.06	-1.13
Anxious Attachment	-0.03 [-0.05, -0.02]	0.01	-0.10

Note. N = 1159 observations, N = 497 subjects. σ^2 (between-person) = 0.04 (*SD* = 0.21); σ^2 (within-person) = 1.12 (*SD* = 1.06); ICC = 0.04. R^2 (marginal / conditional) = .330 / .355.

[a] Confidence intervals and standard errors via bootstrapping (1000 samples).

Table G2

Multilevel Analysis of Avoidant Attachment Predicting Relationship Satisfaction

Predictors	*b* [95% CI[a]]	*SE*[a]	*Std. Beta*
(Intercept)	5.58 [5.37, 5.79]	0.11	0.59
Relationship status (ended)	-1.47 [-1.60, -1.35]	0.06	-1.12
Avoidant Attachment	-0.05 [-0.07, -0.03]	0.01	-0.14

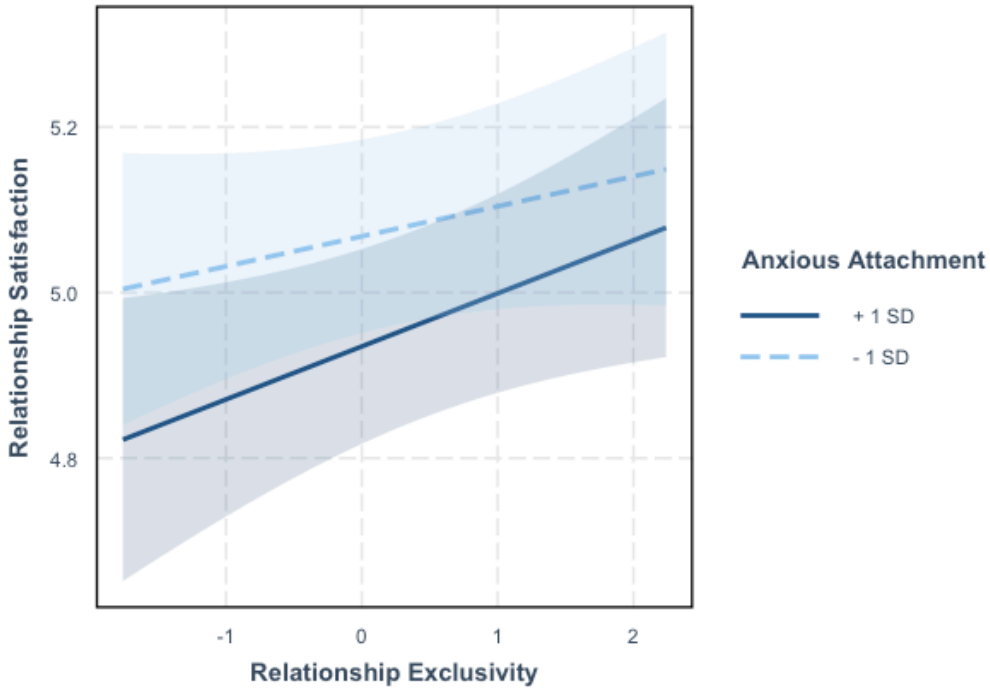
Note. N = 1159 relationships, N = 497 subjects. σ^2 (between-person) = 0.03 (*SD* = 0.17); σ^2 (within-person) = 1.12 (*SD* = 1.06); ICC = 0.03. R^2 (marginal / conditional) = .338 / .356.

[a] Confidence intervals and standard errors via bootstrapping (1000 samples).

Appendix H: Interaction Plot of Anxious Attachment and Relationship Exclusivity Predicting Relationship Satisfaction

Figure H1

Interaction Plot of Anxious Attachment and Relationship Exclusivity Predicting Relationship Satisfaction



Note. Association between Relationship Exclusivity and Satisfaction at Different Levels of Anxious Attachment Style (high: *M* + 1 *SD*, low: *M* - 1 *SD*). Gray areas represent 95% confidence intervals. Values derived from study results above.

Appendix I: Eigenständigkeitserklärung

Hiermit versichere ich,

Hofmann, Moritz	35738916
Name, Vorname	Matrikelnummer

dass ich die Arbeit mit dem Titel

„Exploring Attachment Styles and Relationship Satisfaction in Monogamous and Consensual Non-Monogamous Relationships“

selbstständig verfasst und keine anderen als die angegebenen Hilfsmittel benutzt habe.

Ich erkläre mich damit einverstanden, dass diese Arbeit mit Hilfe von Plagiatssoftware überprüft werden kann. Dies kann beinhalten, dass Teile der Arbeit über das Internet verschickt und auf fremden Servern gespeichert werden.

⊗ Ja ○ Nein

Kassel, den 28.11.2023	
Ort, Datum	Unterschrift