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THE IMPACT OF PERSONALITY ON TIMING AND DYNAMICS OF PARTNERSHIP FORMATION

A Longitudinal Approach

Okka Zimmermann

ABSTRACT:

In this study, I analyzed influences of the 'Big Five' personality traits onto transition risks into partnership and cohabitation and the likelihood of experiencing any of the different identified pattern of partnership dynamics (trajectories) within four years after the measurement of the Big Five. I used data of n = 6,748 respondents of the German PAIRFAM study. The Big Five personality traits were measured in a four-year-interval in this representative study, with partnership events being prospectively recorded in all of the yearly panel waves. I used longitudinal methods (event history analysis, sequence analysis) to analyze influences on prospective partnership events and dynamics.

I found that conscientiousness and extraversion were the main influences on partnership transitions and dynamics. Extraversion increased the likelihood of experiencing short or serial partnerships among men and women. Extraverted men also had a higher likelihood of transitioning into partnerships and experiencing fast processes of institutionalization. Conscientiousness decreased the likelihood of transitioning into a partnership and to experience short partnerships among women. Conscientiousness on the other hand positively influenced the likelihood of transitioning into cohabitation or serial partnerships among men. Contrary to expectations based on prior research, neuroticism played a minor role in predicting partnership transition risks and partnership trajectories. Only among men, neuroticism was positively associated with the risk of experiencing serial partnerships. I conclude that especially extraversion and conscientiousness influence the timing and sequencing of partnership events.

KEYWORDS:

Personality, Personality Traits, Life Course, Event History Analysis, Sequence Analysis, Prospective Analysis, PAIRFAM

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Introduction

Intimate partnerships are an important part of the private life of adults because they help to satisfy many important needs of individuals (Huinink, 1995). Studies showed that their form, quality and stability strongly influences the overall well-being of individuals (e.g., Gardner & Oswald, 2006; Marks, 1996; Peters & Liefbroer 1997; Soons, Kalmijn & Teachman, 2009; Wade & Pevalin, 2004). Therefore, investigating influences on and outcomes of intimate partnerships is important not only for psychology, but also for neighboring disciplines like sociology and demography. From a psychological perspective, many studies have investigated the influence of personality traits (often the 'Big Five') onto the quality and stability of partnerships (see below for an overview of results).

Sociological and demographic research has provided evidence that different individual and institutional circumstances influence the likelihood of following one or the other form of a partnership trajectory or experiencing specific transitions within partnership histories. The transition into a partnership was shown to be the starting event of very different life course experiences in Germany (Fulda, 2016) and elsewhere (Perelli-Harris & Lyons-Amos, 2016). It was demonstrated in the latter studies that partnerships can for example end soon and be followed by singlehood or other shorter or longer partnerships (serial partnerships, partnership cycling) or can stabilize or further institutionalize (through cohabitation and/or marriage) over time. Studies also suggest that intimate partnerships without cohabitation can have different meanings, especially among younger respondents (e.g., trial or more serious partnership; Lois, 2012).

Evidence on the influence of personality traits onto the initiation of intimate partnerships remains scarce and is often limited in scope through low respondent numbers, a regional focus and partnership status only being reported at the waves, so that the exact timing of the start of partnerships is often not known (e.g., Klimstra et al., 2013; Asendorpf & Wilpers, 1998; Jonkmann et al., 2014). Studies using larger samples of surveys did either focus on maturation effects (Specht et al., 2011) or on more institutionalized forms of partnerships (cohabitation and/or marriage; Asselmann & Specht, 2020). The latter two studies additionally focused on the occurrence of events and not on their timing or sequencing. A perspective on timing and sequencing of partnership formation events is thus missing. The only study which to my knowledge applies event history analysis to analyze influences of personality traits onto the transition into a partnership is for a very small sample of $n = 63$ respondents (Asendorpf & Wilpers 1998). There are also no studies that analyze influences of personality traits onto partnership trajectories, investigating for example processes of stepwise institutionalization of

partnerships (through cohabitation and marriage, e.g. Soons, Kalmijn & Teachman, 2009) or partnership cycling/serial partnerships.

The life course perspective however emphasizes that timing and sequences of events which represent role changes are crucial within life courses (for individuals to be successful in life). The life course paradigm assumes that the individual's movement through different roles forms her or his life (Elder, 1994). The life course in this view consists of events and roles in multiple dimensions in private and professional life which the individual must coordinate in time and space to successfully combine them (Mayer, 2009). In recent theoretical conceptualizations of the life course, the role of personality and other aspects of the 'inner life' became more important since they can strongly influence individual behavior and its outcomes (Bernardi, Huinink & Settersten, 2019). Life course theory therefore turns towards more actively including psychological perspectives. From a psychological perspective, Mund et al. (2016) in a similar way highlighted the necessity to include long-term perspectives into research on effects of personality onto relationships because personality effects need time to occur. The longitudinal perspective on transitions and dynamics can thus help to better understand the impacts of personality traits on individual lives and therewith also help to understand these traits even better in their structure and characteristics.

To fill this gap in research on influences of personality traits on timing and sequencing of partnership events, I use data on personality traits and prospective partnerships of n = 6,748 respondents from the German PAIRFAM study. PAIRFAM (Panel Analysis of Intimate Relationships and the Family; Huinink et al., 2011) is a nationwide representative longitudinal panel study with a yearly pro- and retrospective data collection since 2008. Specifically, I focus on the influence of the Big Five personality traits on transition risks into intimate partnerships, into cohabitation and on partnership trajectories (dynamics) within four years after the collection of information on personality traits. I use event history analysis (Allison, 1984) to analyze influences on the occurrence and timing of events, and sequence analysis (Aisenbrey & Fasang, 2010) in combination with multinomial regression analysis to analyze relative risks of entering a developmental path.

Personality Traits and Partnerships

Since the 1980s, it has been widely accepted among psychologists that the model of the Big Five personality traits is "essentially correct in its representation of traits" (McCrae & John, 1992, p. 176). Though there is some variation in the exact definition and operationalization of the five dimensions neuroticism, extraversion, openness, agreeableness and conscientiousness (e.g., Matthews, Deary & Whiteman, 2003; Rammstedt & John, 2005), the Big Five model has since then been used as a standard in many research applications.

NEUROTICISM

People with high scores in neuroticism (sometimes described as 'emotional instability', Specht et al., 2011; Asselmann & Specht, 2020) are commonly described as often expressing "distress, discomfort, and dissatisfaction over time and regardless of the situation" (Watson & Clark, 1984, p. 483). They show tendencies of anxiety, angry hostility, depression, impulsivity and vulnerability (Matthews, Deary, & Whiteman, 2003, p. 24). Neuroticism is furthermore related to negative affect (Gross, Sutton & Ketelaar, 1998; Heller, Watson & Illies, 2004).

Klimstra et al. (2013) found that neuroticism positively influences the likelihood of starting a partnership among young men. Asselmann and Specht (2020) reported a negative influence of emotional stability on the likelihood of transitioning into cohabitation. Specht et al. (2011) found that low emotional stability increases the likelihood of marrying among women. Scholars argue that individuals with higher scores in neuroticism scales are more dissatisfied with their current situation and may therefore be more active in searching for a partner and in consequence be more likely to find one (Asselmann & Specht, 2020). For similar reasons they might be especially keen on further institutionalizing a partnership through cohabitation or marriage. I thus pose that neuroticism positively influences the likelihood of transitioning into a partnership (hypothesis 1) and further institutionalizing it via transitioning into cohabitation (hypothesis 2).

Neuroticism is presumably the strongest negative predictor of partnership satisfaction and stability among the Big Five personality traits (Solomon & Jackson, 2014,; Karney & Bradbury, 1997; Robins, Caspi, & Moffitt, 2002; Asselmann & Specht, 2020). People with higher scores in scales of neuroticism may evaluate their partner and partnership negatively, leading to a dissolution of a partnership, potentially mediated through negative interactions and conflicts within the partnerships and less marital adjustment (Mousavi, 2017; Bouchard, Lussier & Sabourin, 1999). They might react more negatively or distressed to other circumstances of their life or life events, which can influence their

behavior within a partnership (Solomon & Jackson, 2014). They often apply a passive, emotional style of coping with problems and conflicts (Watson & Hubbard, 1996). These problems may remain unsolved, pile up and lead to dissatisfaction and partnership dissolution. Neurotic tendencies might lead to more negative anticipations for the future and in consequence distress and conflict within a partnership (Solomon & Jackson, 2014). Within the vulnerability stress adaptation model of Karney and Bradbury (1995, 1997), neuroticism can therefore also be conceptualized as "enduring vulnerability" (Mund et al., 2016, p. 411).

Many classical and current studies show that neuroticism negatively correlates with partnership satisfaction and stability (e.g., Cramer, 1993; Dyrenforth et al., 2010; Heller, Watson & Hies, 2004; Karney & Bradbury, 1995, 1997; Mousavi, 2017; Mund et al., 2016; Robins, Caspi & Moffitt, 2002; Solomon & Jackson, 2014; White, Hendrick & Hendrick, 2004; Asselmann & Specht, 2020), however mostly focusing on marital relationships. I still hypothesize that neuroticism increases the likelihood of instable and therewith short partnerships (hypothesis 3). Because neuroticism supposingly increases the likelihood of starting and institutionalizing partnerships (see above), it is likely that it is associated with partnership cycling/serial partnerships (i.e., several short partnerships in a row) or a fast process of institutionalization (hypothesis 4).

CONSCIENTIOUSNESS

People with high scores in scales of conscientiousness are disposing a planned, efficient, deliberate and systematic behavior with a high level of self-discipline. They take obligations seriously and carry them out carefully. Low levels of conscientiousness are associated with unreliable, forgetful and irresponsible (Holland & Roisman, 2008) as well as impulsive behavior (Robins, Caspi & Moffitt, 2002).

Conscientiousness might ease the maintenance of romantic partnerships (e.g., by reserving time to spend together regularly, planning joint activities) (Asendorpf & Wilpers, 1998) and actively solving conflicts (Watson & Hubbard, 1996). It might therefore increase satisfaction within a and the duration of a partnership as well as the likelihood of finding a partner. Among men, conscientiousness might increase the likelihood of finding a female partner because of potentially higher earning capacities (Botwin, Buss & Shackelford, 1997).

Conscientiousness was empirically shown to increase marital or partnership satisfaction, quality and stability (Barelds, 2005; Botwin, Buss & Shackelford, 1997; Dyrenforth et al., 2010; Heller, Watson & Hies, 2004; Holland & Roisman, 2008; Orth, 2013; Solomon & Jackson, 2014). Conscientiousness of their male partners also influence women's satisfaction with marriage (Dyrenforth et al., 2010). Conscientiousness

has positive impacts onto intimacy for males (White, Hendrick & Hendrick, 2004) and leads to a more secure attachment to a partner (Asendorpf & Wilpers 1998) which is likely to enhance partnership institutionalization. I therefore hypothesize that conscientiousness reduces the likelihood of experiencing short or serial partnerships (hypothesis 5) but increases the likelihood of a fast process of institutionalization (hypothesis 6).

Klimstra et al. (2013), Asendorpf and Wilpers (1998), Specht et al. (2011) and Asselmann and Specht (2020) did not report significant influences of conscientiousness onto the likelihood of starting a partnership or further institutionalizing it via cohabitation or marriage. I therefore assume that conscientiousness does not influence the risks of transitioning into a partnership or a cohabitation (hypothesis 7).

AGREEABLENESS

People with an agreeable personality often show respectful, kind, cooperative and altruistic behaviors. They are often modest and trustful and try to comply with expectations (Matthews, Deary & Whiteman, 2003). Less agreeable people are more selfish and often display a lack of empathy (Graziano & Eisenberg, 1997).

Theoretical considerations suggest that agreeable people should be more likely to interact with potential partners because of empathy and willingness to comply with expectations within social interactions. They may for example spend more time with others, which creates opportunities for new relationships (Asendorpf & Wilpers, 1998). Their respectful and altruistic behavior is likely to motivate other people to intensify contact with agreeable people, making finding a suitable romantic partner more likely. Agreeableness was also shown to be desirable for potential partners (Botwin, Buss & Shackelford, 1997), making it likely easier for agreeable people to find a partner. Empirical studies did however either not find evidence for influences of agreeableness onto the likelihood of entering a romantic partnership (Klimstra et al., 2013; Specht et al., 2011) or found negative influences of agreeableness on the transition into a partnership or marriage (Asselmann & Specht, 2020). Asselmann and Specht (2020) argue that less agreeable individuals might be more prone to experience a transition into a partnership or cohabitation because of greater problems, dissatisfaction or distress in prior partnerships, without a partner or in a partnership with a lower level of institutionalization. I therefore hypothesize that agreeableness decreases the likelihood of transitioning into a partnership or a cohabitation (hypothesis 8).

Scholars have suggested numerous mechanisms through which agreeableness might influence partnership satisfaction and stability. People with high levels of agreeableness for example often respond to conflicts in a constructive manner (Mousavi, 2017; Jensen-Campbell & Graziano, 2001). They are therefore less prone to experience negative, hostile interactions instead of harmonious, warm and positive interactions within partnerships (e.g., Donnellan, Conger & Bryant, 2004; Luo & Klohnen, 2005; Gottman et al. 1998). This in turn might increase interpersonal identity and commitment as well as partnership satisfaction, quality and stability and reduce doubts with respect to the partnership (Donnellan, Conger & Bryant, 2004; Solomon & Jackson, 2014; Klimstra et al., 2013). Positive effects are likely to cumulate if the partner has a similar level of agreeableness (Solomon & Jackson, 2014). The altruistic and cooperative behavior of people with high scores in scales of agreeableness also makes it more likely that a romantic partner perceives the partnership to be valuable and is willing to contribute to its maintenance. Both processes should lead to greater satisfaction with the partnership for both partners. It is therefore plausible to assume that agreeable individuals are more likely to experience stable, satisfactory romantic partnerships.

In accordance with these theoretical assumptions, prior empirical research revealed the positive impacts of agreeableness onto relationship quality, satisfaction and stability (Asendorpf & Wilpers, 1998; Asselmann & Specht 2020; Barelds, 2005; Donnellan, Conger & Bryant, 2004; Dyrenforth et al., 2010; Heller, Watson & Hies, 2004; Holland & Roisman, 2008; Mousavi, 2017; Orth, 2013; Solomon & Jackson, 2014; Watson, Hubbard & Wiese, 2000; White, Hendrick & Hendrick, 2004). I therefore assume that agreeableness negatively influences the likelihood of experiencing short or serial partnerships (hypothesis 9). Because of the assumptions on transitions into partnership or cohabitation described above, I however assume that individuals with higher scores for agreeableness are less likely to experience a fast transition into cohabitation (i.e., fast process of institutionalization, hypothesis 10).

EXTRAVERSION

Wilt and Revelle (2008) highlight that already the ancient Greek literature mentions boldness, assertiveness and talkativeness as specific characteristics of some individuals. People with higher levels of extraversion are usually talkative and energetic when working or diverting himself or herself in a group (Eysenck & Eysenck, 1967; Eysenck & Wilson 1991). They like spending time with other people and therefore enjoy participating in social activities. Positive emotions or affect (including warmth and motivation) are also associated with this personality trait (Matthews, Deary & Whiteman, 2003; Depue & Collins, 1999). Sociability (interpersonal engagement, referring to the amount and intensiveness of social contacts) and impulsivity (fast, sometimes unthoughtful behavior, lacking restraints) are

important aspects of extraversion (Plomin, 1976; Depue & Collins, 1999; Wilt & Revelle 2008). Because extraversion is associated with positive affect (Lucas & Baird, 2004), neuroticism (related to negative affect) and extraversion are to some extent contrarious traits (Gross, Sutton & Ketelaar 1998; Heller, Watson & Hies 2004). Extraversion is also positively related to reward sensitivity, which Lucas et al. (2000) deem to be the core underlying feature of extraversion. Individuals with low levels of extraversion tend to be quiet and submissive (Holland & Roisman, 2008).

Extraversion is also positively associated with interpersonal in-depth exploration and commitment (Klimstra et al., 2013) which is likely to contribute to partnership quality and stability. Watson and Hubbard (1996) highlighted in this sense that people with higher levels of extraversion are more likely to actively solve conflicts (adaptive coping style), for example by seeking support and showing a more problem-focused way of coping. Because of their high level of sociability, they are likely to come in contact easily with potential partners. In accordance with this theoretical assumption, scholars found that sociability positively influences the likelihood to find a partner or start a cohabitation or marriage (Asendorpf & Wilpers, 1998; Asselmann & Specht 2020; Klimstra et al., 2013). I therefore expect positive influences of extraversion onto the risks of transitioning into a partnership or cohabitation (hypothesis 11).

Most studies report that extraversion is positively related to marital satisfaction (Barelds, 2005; Dyrenforth et al., 2010; Heller, Watson & Hies, 2004; Karney & Bradbury, 1995; White, Hendrick & Hendrick, 2004), marital quality (Dyrenforth et al., 2010; Holland & Roisman, 2008; Watson, Hubbard & Wiese, 2000), marital stability (Eysenck & Wakefield, 1981; Orth, 2013; Solomon & Jackson, 2014) or marital adjustment (Mousavi, 2017). There is very limited evidence for contrarious assumptions, highlighting that extraversion is positively associated with divorce or relationship instability (Cramer, 1993; Asselmann & Specht, 2020 only for separation (not for divorce) among women), marital dissatisfaction (Lester, Haig & Monello, 1989) or that there is no correlation (Botwin, Buss & Shackelford, 1997). I therefore hypothesize that extraversion negatively influences the likelihood of experiencing short or instable partnerships (hypothesis 12). Because of the positive influence on partnership transitions, individuals with high scores in the extraversion scale are expected to be more likely to experience a fast process of institutionalization (hypothesis 13).

OPENNESS TO EXPERIENCES

The personality trait openness to experiences (often only named ‘openness’) represents different aspects of personality like curiosity, being imaginative and creative and a preference for variety and change instead of routines (McCrae & John, 1992). A person with high scores in this trait typically has a

lot of ideas in his/her mind, i.e. a strong fantasy (Matthews, Deary & Whiteman, 2003). How these aspects may relate to partnership trajectories is somewhat unclear from the literature. We could imagine that openness positively influences the likelihood of finding a partner and of maintaining interest in him/her because of curiosity for other persons. However, it could also lead to a lower willingness to bind to a partner and a higher likelihood of engaging with potential alternative partners to increase variety of experiences and escape routines of everyday life. More open individuals might therefore be discouraged by having to commit themselves to regular appointments within a couple relationship, which can hinder maintenance and stabilization of partnerships. Empirically, there are no or small effects of openness onto partnerships, which also point towards different directions (Asselmann & Specht 2020; Donellan, Conger & Bryant, 2004; Dyrenforth et al., 2010; Mousavi, 2017; Orth, 2013; Solomon & Jackson, 2014).

Based on the ambiguous theoretical assumptions and empirical results, I therefore hypothesize that openness does not significantly influence transition risks into partnership or cohabitation or the likelihood to experience any specific partnership trajectory (hypothesis 14).

Methodology

DATA AND PROCEDURE

I use data of wave one to ten (release 10.0, Brüderl et al., 2019) of the German Family Panel PAIRFAM (Panel Analysis of Intimate Relationships and Family Dynamics, Huinink et al., 2011), a panel study (one wave per year) conducted since 2008/2009 for the birth cohorts 1991–1993, 1981–1983, and 1971–1973. I also included 'step-ups' (who did not participate from the beginning) and respondents, who participated in the DemoDiff-study in wave two and three, which were later integrated into the sample of PAIRFAM. The 'biopart'-file contains information about all partnerships of the respondents, including information on the time in a partnership without cohabitation (often also called 'living apart together' or LAT), in cohabitation or in marriage. As the PAIRFAM study did not include any information on medications, it did not need to be approved by an ethics committee.

Originating from the information on the personality traits collected in waves two, six and ten, I first selected individuals for which the information on the independent and control variables was available and who participated at least in one further wave (i.e., wave three, seven or eleven). Out of the latter, all respondents single at the beginning of the observation period were included in a data set B. I used this data set B to analyze influences on the transition into a partnership. Data set C included the

respondents which were in a partnership, but not in a cohabitation at the beginning of the observation period. I used data set C to analyze transitions into cohabitation. In data set A (to be used for sequence analysis), I included a subset of respondents from data set B (single at beginning), which participated in all waves between wave two and wave six or wave six and wave ten.

This resulted in a total of *n* = 2,198 respondents in data set A (singles at beginning, information for four years available, used for sequence analysis), *n* = 4,115 respondents in the data set B (singles at beginning, for the analysis of the transition into partnership and cohabitation) and *n* = 2,669 respondents in the data set C (in non-cohabitational union at beginning, for the analysis of the transition into cohabitation). Figure 1 illustrates the composition and relationship of the data sets.

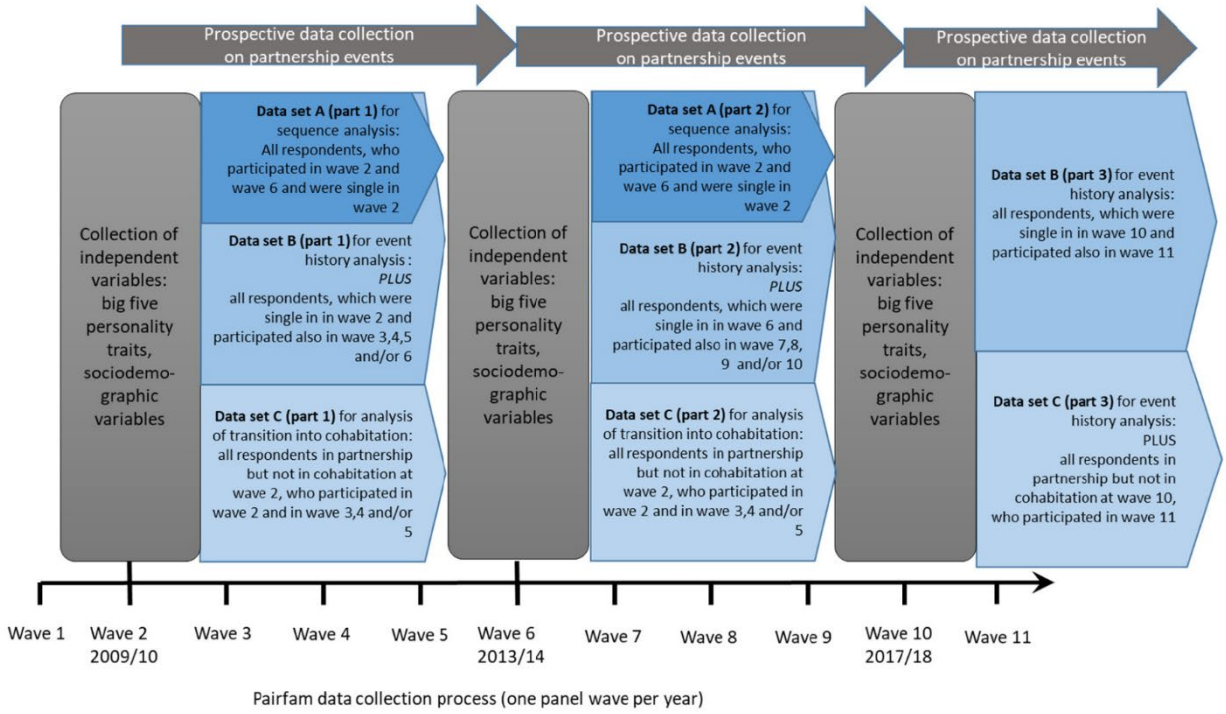


Figure 1: Visualization of structure of the data set

MEASURES

The Big Five personality traits were measured using 21 items suggested by Rammstedt and John (2005) on a five-point scale in wave two (2009/2010), six (2013/14) and ten (2017/18) which therefore mark the start of our periods of investigation. I tested the consistency of the composed scales of the personality traits using Cronbach's alpha (all values except one above 0.6, see table 4 in the appendix) and constructed indices for the five. The latter was done by reversing some of the scales of the indices (see table 5 in the appendix) so that all items point towards the same direction. Afterwards, I calculated the

mean of each of the five measures and normalized it to an average of 0 and a standard deviation of 1 within each of the three data sets.

For event history analysis, waves two, six or ten were the starting points of the observation period. For those individuals who experienced and reported the transition into a partnership or cohabitation between wave two and wave six, between wave six and wave ten or between wave ten and wave eleven, this event was inserted into the data sets A and B. For those who did not experience and report the event, the data of the last wave within this observation period (respondent needed to participate in at least one more wave within the observation period) in which they participated was inserted (right censored data). For sequence analysis, I created partnership sequences consisting of four states (single, partnership without cohabitation/LAT, cohabitation, marriage) with one partnership state defined for every month for the time between wave two and six or wave six and ten. The sequences included between 36 and 53 elements, representing a period between 3.5 years and 5 years and 5 months.

Furthermore, covariates were included into the analysis to control other factors that might influence the result. All of them are measured at the beginning of the observation period, i.e., in the wave in which the personality traits were collected. A covariate on **region** (East vs. West Germany) distinguishes between respondents from regions belonging to the GDR (German Democratic Republic) until 1990 from those who live in parts of Germany, which belonged to the FDR (Federal Republic of Germany) from 1949 on. This control variable was advisable because partnership and family formation cultures are still very different in the two parts of Germany (e.g., Raab, 2017). Furthermore, I expect employment and educational status to play an important role in partnership formation, not only because it influences financial resources and influences the necessity for flexibility among individuals. I used a variable on **activity status** (distinguishing between in education, regular full-time employment, other forms of employment[1] and not employed[2]) to mirror these influences. I furthermore expected that individuals living in an urban area have more possibilities to meet potential partners, which should positively influence their likelihood to enter a partnership. Because of smaller distances, it should also be easier to maintain and stabilize a partnership. I therefore inserted a covariate which distinguishes respondents living in an **urban** community (50,000 or more inhabitants) from those living in smaller towns or rural areas (less than 50,000 inhabitants).

Because Wagner (2019) emphasized the role of health for partnership transitions, I inserted a covariate on **health** within the last four weeks (good/very good vs. bad/satisfactory, deducted from a five-point

[1] Including self-employment, part-time employment, marginal employment, internships, other irregular employments, military and civil services

[2] Including maternal or paternal leave, retirement, disability, joblessness

scale on health in the last four weeks). The likelihood for partnership formation is also likely to differ between age phases not only because of the ticking of the biological clock (Wagner, Huinink & Liefbroer, 2019). **Age** is therefore another important covariate which I controlled. Because prior partnership experiences might change future partnership behavior, I additionally included covariates on the **number** of prior **partnerships**, **cohabitations** and **marriages**. I included a variable on the **wave** at which the observation period started (wave two, six or ten), which reflects influences of potentially time-varying institutional circumstances and potential differences in the data collection procedure between the waves. Additionally, I used a variable marking **repetitive observations** for those respondents, for which more than one observation period was included in the analysis.

ANALYSIS STRATEGY

I analyze the effects of personality traits onto partnership transitions and dynamics within four years after the personality traits were measured. Because marriages were rare within three years of time among respondents being single or in a non-cohabitational union at the beginning of the observation window, I only analyze transitions into partnership and cohabitation. I carried out all of my analysis in Stata.

Event History Analysis

I used Cox' single-destination regression models (Cox, 1972) to model the influences of personality traits and the covariates onto transition rates into partnership or cohabitation. Event history analysis treats changes between states (partnership states in our example) as events and analyses, which factors influence the occurrence and timing of this event. Because of the strong influence of the partnership status at the beginning of the observation period on the risk of transitioning into cohabitation, I calculated separate models for individuals in and not in a non-cohabiting partnership for this transition. After calculating the Cox regression models, I tested the proportional-hazards assumption based on Schoenfeld residuals (Schoenfeld, 1982).

Sequence Analysis

I used the sequence analysis methodology (Aisenbrey & Fasang, 2010) to analyze influences of personality traits onto early partnership dynamics. Sequence analysis is a methodology to analyze sequences of elements, which in this case represent states within the life course. The main method to handle the complexity of the life courses is grouping them via cluster analysis; for this purpose, different ways of calculating sequence dissimilarity have been suggested (Aisenbrey & Fasang 2010; Studer & Ritschard, 2016). The theoretical perspective on partnership dynamics in this contribution suggested

specifically focusing on event or episode orders that reflect developments of partnerships (i.e., whether they are soon ended or further institutionalized). Studer and Ritschard (2016) suggest that in this case, an episode-based dissimilarity measure is most adequate. I therefore used the 'Longest Common Episode Order' (LCEO) suggested by Zimmermann (2020). For this measure, the complexity of the sequence was in a first step reduced by deleting all repetitions of elements so that one element represented each episode within the sequence. The measure then identifies the longest sequence of episodes, which is part of both life courses compared, by deleting non-common elements. The number of elements in this longest sequence is afterwards divided through the mean number of episodes of both sequences compared; the result is an indicator for sequence (dis)similarity – the lower, the more dissimilar are the sequences. I used Ward's method to cluster sequences.

Sequences, even if they only reflect one life course dimension, can vary in many aspects (e.g., prevalence, timing and repetitions of events) and therefore form a continuum instead of naturally falling into groups (Halpin, 2010). The clustering within sequence analysis is therewith not a tool to discover existing structures within the data, but merely a tool to sort the data in a useful way. The selection of the cluster often represents a compromise between wishing to include many relevant differences between clusters and using a manageable number of groups. I used Pseudo-R^2 and Pseudo-F suggested by Studer et al. (2011) to select the cluster solution. With an increase in the number of clusters, Pseudo-R^2 and Pseudo-F often either continuously increase or continuously decrease. I therefore used the elbow-criterion as well as a comparison of the cluster solutions with respect to their suitability for the research question at hand to identify a suitable cluster solution. I used multinomial regression with relative risk ratios to analyze the influence of the Big Five personality traits onto the likelihood to experience any of the six partnership trajectories.

I used Halpin's (2017) SADI-Tools to calculate sequence dissimilarity and generate clusters, while the SQ-ados of Brzinsky-Fay, Kohler and Luniak (2006) helped to generate the sequence index plots. Because over-plotting (especially of sequence states with a low numerical code) is a serious problem, sequence index plots are calculated for a randomly selected set of 50 respondents. In this set-up, all lines are fully visible within the plots, which helps to avoid misinterpretations.

Results

In the following, I first describe the results of the two analytical approaches. Afterwards, I evaluate the hypotheses in a separate chapter in a summarizing manner.

Table 1: Results of Cox (1972) regression models for single destinations

*p< 0.05; * p< 0.01; *** p<0.001; Influences on transition risks into partnership and cohabitation. Prob>Chi² > .05 in all tests of proportional hazards assumption based on Schoenfeld residuals.

	Models I. transition into partnership (data set B, singles)		Models II. transition into cohabitation (data set B, singles)		Models III. transition into cohabitation (data set C, in non-cohabiting partnership)	
	a) Women Obs. 1,897 Prob>Chi² .000	b) Men Obs. 2,218 Prob>Chi² .000	a) Women Obs. 1,897 Prob>Chi² .000	b) Men Obs. 2,218 Prob>Chi² .000	a) Women Obs. 1,472 Prob>Chi² .000	b) Men Obs. 1,197 Prob>Chi² .000
‚Big 5' personality traits						
Neuroticism	1.00	1.06	.98	1.05	.91	.94
Conscientiousness	.90*	1.03	.98	1.05	1.03	1.16*
Agreeableness	.94	1.03	.93	1.00	1.00	1.01
Extraversion	1.06	1.13**	1.09	1.19**	1.07	.94
Openness	1.00	1.00	1.11	.95	.99	1.00
Control variables						
Urban population	.97	1.06	.86	.80	.99	.87
East Germany	1.02	1.01	1.42**	1.12	1.09	.74
Bad health	.99	.99	1.01	.97	1.00	1.22
Activity status [reference: in education]						
Regular Full-time employment	1.53**	1.01	2.34***	1.58*	2.09***	1.85***
Other employment	1.27	1.10	1.57	1.93**	1.47*	1.54
Not employed	.99	.65**	1.41	.81	1.39	.93
Wave at beginning of observation period [ref: wave 2]						
Wave 6	1.00	1.08	1.27	1.21	1.54**	1.35
Wave 10	2.25	5.29	2.89	1.94	4.33	1.80
Repeated observation	.83	.86	.88	.98	.90	1.12

Number of partnerships (variable np)	1.06	1.05	1.14**	1.08	1.05	.96
Number of cohabitations (variable ncoh)	1.10	1.08	1.11	1.12	1.07	1.07
Number of marriages (variable nmar)	1.35*	.81	1.11	.63	.62*	.97
Age	.94***	.97***	.95***	1.01	.98*	1.01

Source: PAIRFAM, own calculations.

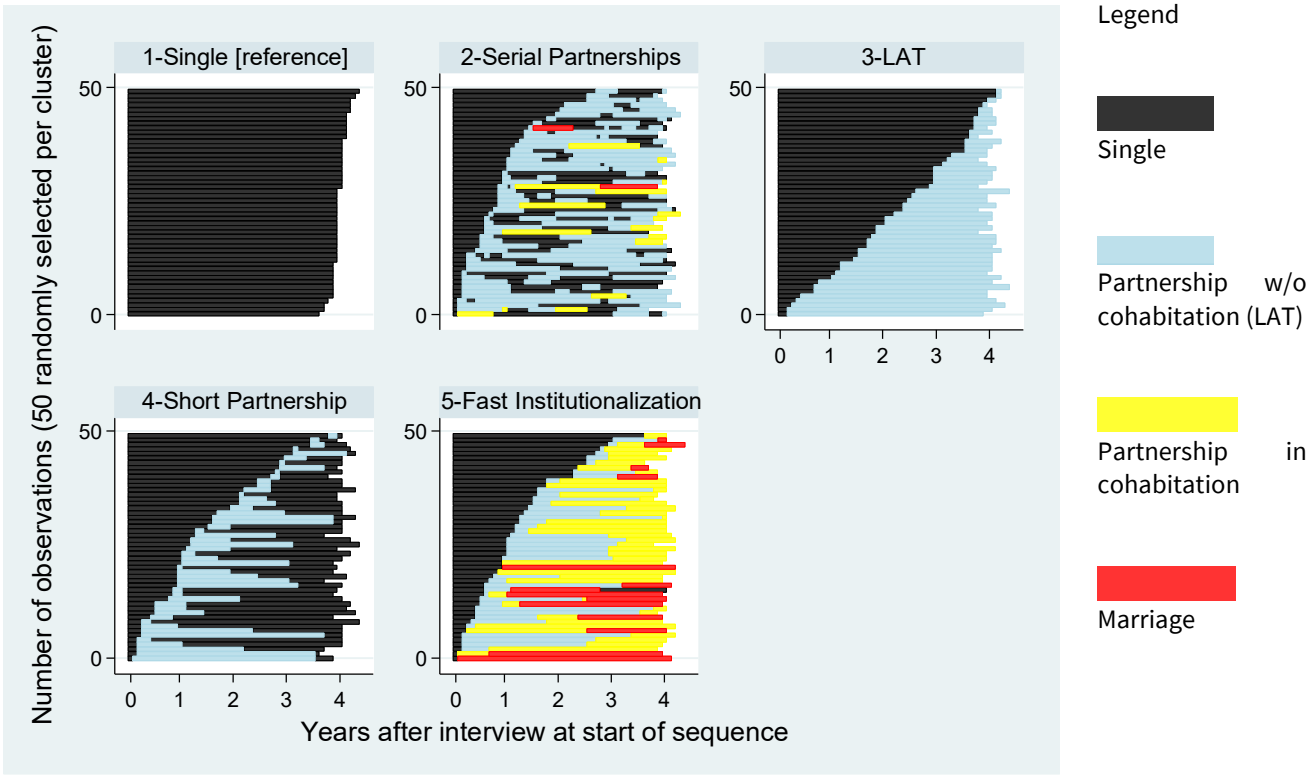
EVENT HISTORY ANALYSIS

The models reveal that there are only few and comparatively small influences of the personality traits on the risk of transitioning into partnership or cohabitation. A higher level of extraversion increases the risk of transitioning into a partnership or cohabitation among single men. Conscientiousness increases the likelihood of transitioning into cohabitation among men in a non-cohabitational union while it decreases the likelihood of transitioning into a partnership among single women. The data overall suggests that the employment status has a much stronger influence on partnership transition risks than personality traits.

SEQUENCE ANALYSIS

Based on the elbow-criterion applied to Pseudo-R^2 and Pseudo-F suggested by Studer et al. (2011), I selected the five-cluster-solution for further analysis since the strongest increase in Pseudo-F is reported between clusters four and five (compared to all increases between two and fifteen clusters, see table SM.3) and Pseudo-R^2 also strongly increases (local maximum, stronger increases only between two- and three-cluster solution). The clusters of the five-cluster-solution represent clearly distinguishable patterns of partnership trajectories (see figure 1). A comparison to the four-cluster solution revealed that the important difference between short and serial partnerships vanished through the combination of these cluster. In the six-cluster solution on the other hand, cluster two (‘serial partnerships’) was split into two not clearly distinguishable cluster with no benefit for my analysis. Therewith, I deem the five-cluster solution most appropriate for my analysis.

Figure 2: Sequence index plots for cluster of partnership trajectories, sorted by prevalence (descending)
Sequence Index Plots for 50 randomly selected respondents for five-cluster-solution. Data collection between wave two and six or wave six and ten, n=2,198 respondents.



Source: Pairfam wave 2-10, own calculations.

Figure 1 displays the clusters in descending order of prevalence. Cluster one was the biggest cluster (33% of male respondents; 32% of female respondents). Respondents in this cluster did not experience partnership-related events within the observation period. About a fifth of respondents (22% male, 20% female) experienced serial partnerships within the observation period, e.g., at least two different partnerships (the great majority without cohabitation) with a break in between. 17% of men and women in the sample started a non-cohabitational union and remained within this union until the end of the observation period. The length of the union differed between a month and more than four years. Respondents of cluster four (15% of men and women) reported one partnership that started and ended within the observation period. The partnership was often short (between a few months and two years). A fast transition into cohabitation and for a minority also into marriage was experienced by 14% of men and 15% of women in the sample (cluster five).

Cluster 1 was used as a reference category in the multinomial regression models (table 2) because it was the largest cluster in the sample. Additionally, it was the only cluster with no partnership events and it deemed useful to compare the clusters including partnership events to this cluster without

events. While cluster three is not relevant for evaluating the hypotheses, cluster two, four and five represent partnership pattern, for which I assumed influences of personality traits.

Table 2: Results of multinomial regression analysis (all respondents)

*p< 0.05; * p< 0.01; *** p<0.001; Relative risks ratios displayed for likelihood to experience any of the four types of trajectories in comparison to remaining single (cluster 1). n=1,016 women, Prob>Chi^2 .000, Pseudo-R^2 .073. n=1,182 men, Prob>Chi^2 .000, Pseudo-R^2 .054.

[reference: 1-single]	2-Serial partnerships		3-LAT		4-Short partnerships		5-fast institutionalization	
	Women	Men	Women	Men	Women	Men	Women	Men
'Big 5' personality traits								
Neuroticism	1.18	1.41***	.89	1.17	1.13	1.08	.98	1.15
Conscientiousness	.84	1.28**	.74**	1.25*	.76 *	.98	.81	1.10
Agreeableness	.91	.94	.92	1.05	.93	1.06	.87	.96
Extraversion	1.36**	1.59***	1.06	1.22	1.28*	1.27*	1.20	1.45**
Openness	.89	.89	.92	1.02	.82	1.15	.97	1.04
Control variables								
Urban population	.95	1.22	1.05	.84	1.15	1.27	.76	.88
East Germany	1.57	1.07	.98	.93	1.19	.88	1.73*	1.19
Bad health	1.25	1.10	1.01	.83	1.04	1.02	.94	.94
Activity status [reference: in education]								
Regular Full-time employment	2.17*	1.45	1.34	1.00	2.72**	.90	4.47***	1.75
Other employment	1.77	1.42	1.01	1.19	2.28*	1.14	3.38**	1.88
Not employed	1.92	.73	1.42	.42*	1.09	.83	2.58*	.65
Wave at beginning of observation period [ref: wave 2]								
Wave 6	1.11	.84	1.04	1.34	.70	.95	1.55	1.88*
Repeated observation	.43*	.77	.47*	.96	.76	.74	.39**	.57*
Age	.88***	.91***	.92***	.93***	.90***	.93***	.92***	.96*
Constant	11.66***	6.23***	4.84***	3.75**	5.31***	2.44*	2.61*	.92

Source: PAIRFAM, own calculations.

EVALUATION OF HYPOTHESES

Because of the great number of hypotheses and potential influences found, I cannot evaluate them one by one. Instead, table 3 indicates for which combination of traits and partnership transition or trajectory no influences were found (cell white and only one line), for which combination I found support (second line marked in green) and in which cases I found contradicting evidence (second or third line in red). It is also specified whether the evidence was found for men, women or both genders and whether the influence assumed and found was positive (+), negative (-) or whether no influence was assumed (no).

Contrary to the expectations, I did find no influences of agreeableness and only one influence of neuroticism. This positive influence of neuroticism among men on the likelihood of experiencing a serial partnership is however of considerable size (1.41). In line with my expectations, I also found no influences of openness.

Some of my expectations with respect to influences of extraversion were supported (positive influences on the transition into partnership and on fast processes of institutionalization only among men). I however did not find influences of extraversion on the risk of transitioning into cohabitation. Contrarious to my expectations, I furthermore found positive influences of extraversion on the likelihood of experiencing one or several short partnerships without cohabitation among men and women. These effects are especially strong for serial partnerships among men.

	Influences on partnership transitions		Influences on partnership trajectories (dynamics/pattern)		
Personality trait	Partnership	cohabitation	Short partnership	Serial partnerships	Fast institutio-nalization
Neuroticism	+ (H1)	+ (H2)	+ (H3)	+ (H4) + men	+ (H4)
Conscientiousness	no (H7) - women	no (H7) + men (in non-coh. p.)	- (H5) - women	- (H5) + men	+ (H6)
Agreeableness	- (H8)	- (H8)	- (H9)	- (H9)	- (H10)
Extraversion	+ (H11) + men	+ (H11)	- (H12) + both	- (H12) + both	+ (H13) + men
Openness	no (H14)	no (H14)	no (H14)	no (H14)	no (H14)

Table 3: Overview of hypotheses, including their evaluation
Overview about hypotheses deducted from theory and prior research results and evaluation based on analyses within this study.
For each personality trait and partnership event or trajectory, the assumptions of the hypotheses are described in the first line and significant results (if any) found are described in the second (and sometimes third) line.
Legend symbols and words
+ = positive influence assumed or found (higher scores in this personality trait increase the likelihood to experience this partnership event (faster) or this specific type of partnership trajectory);
- = negative influence assumed or found (higher scores in this personality trait decrease the likelihood to experience this partnership event (faster) or this specific type of partnership trajectory);
no = no influences assumed;
H = Hypothesis (note, that some hypotheses make assumptions on more than one partnership transition or trajectory type).
men = supported or not supported in the sample of men.
women = supported or not supported in the sample of women.
both = supported or not supported in the sample of women.
Legend colours
Green = hypotheses supported; red = evidence for the opposite was found (hypotheses not supported); White = No significant influences found (hypotheses not supported)

With respect to conscientiousness, I found more influences than I expected. In line with my expectations, conscientiousness decreases the likelihood to experience short partnerships among women, the effect size (.76) is remarkable. Contrary to my expectations, the results reveal a positive influence of conscientiousness on the likelihood to transition into cohabitation among men in non-cohabitational unions, while conscientiousness negatively influences the likelihood of transitioning into a partnership among women.

Conclusions and Discussion

From a longitudinal perspective (based on the paradigm of life course research), my research shaded a new light on influences of personality traits onto intimate partnerships and can thus help to better understand these traits. Altogether, the longitudinal perspective of this research suggests that out of the Big Five personality traits, conscientiousness and extraversion are the most important ones with respect to influencing the timing of partnership transitions and partnership dynamics at early stages of partnership development. For both personality traits, the influences found differ from the expectations to some extent (see below for details). The results overall most importantly point at the fact that conscientiousness plays a larger role in partnership formation processes than prior research suggested, and that neuroticism, on the other hand, is of minor importance.

The influences of conscientiousness are strongly mediated by gender, i.e., different for men and women. Conscientious women were shown to have lower transitioning risks into a partnership and to be less likely to experience short partnerships. This is plausible if we consider that individuals with high scores for conscientiousness are likely to plan actions more intensively (likely including the initiation of a partnership), be self-disciplined and less likely to act impulsively. They are therefore likely to initiate a partnership only after seriously (of course subjectively) evaluating entities like the fit between the partners and the likelihood that the partnership will last.

Among men, conscientiousness positively influences the risk of transitioning into cohabitation and experiencing serial partnerships. These results also seemingly do not fit together because cohabitation represents a step in the process of institutionalization of a partnership, while experiencing serial partnerships does point towards a reluctance or inability (for example due to restricting circumstances) to institutionalize a partnership. A potential explanation for these seemingly contradictive results may be that men with high levels of conscientiousness might explicitly choose one or the other option, potentially depending on circumstances. They might transition into cohabitation if they can afford it or know that they will remain within the town, e.g., because they have a good job there or if they are

convinced to have found the best partner. They might on the other hand decide to end the partnership and try a new one if the circumstances do not allow for further institutionalization or if they are convinced that they have not yet found the right partner. If there partners then end the partnership because of the reluctance of the man to institutionalize it, conscientious men might end up in a serial partnership. Further research is however needed to verify these assumptions.

Contrary to my expectations, I found positive influences of extraversion on the risks of experiencing short or serial partnerships for both genders, while prior results suggested that individuals with high scores for extraversion are more likely to experience a stable partnership or a fast process of institutionalization. A potential explanation for this result is that individuals with a high level of extraversion are more likely to meet other (potential) partners. This might be specifically likely in younger years and therefore be specific for this analysis for a younger sample. They might therefore be more likely to enter a partnership, but also to end it if they are not completely satisfied. For men, the results support this interpretation because transition risks into partnerships are higher among the more extraverted. On the other hand, men are also more likely to experience a fast process of institutionalization of a partnership. This could indicate that extraverted men might choose the latter if they have found a suitable partner, but might end partnerships and try several new ones if the partner does not appear to be suitable.

Some of the differences between my results and results of prior research could be due to the fact that my sample is young and that I look on intimate partnerships at an early stage. Prior studies mostly analyzed stability of marital unions of older respondents, while studies on partnership formation also focused on young respondents (Klimstra et al., 2013; Asendorpf & Wilpers, 1998). Apart from that, the perspective on timing and sequencing of partnership events (instead of occurrence, like in most prior studies) could have influenced the results. It is possible that personality traits influence time-dependent transition risks and partnership dynamics in other forms than the occurrence of partnership-related events. The comparison of the results of this and prior studies for example suggests that neuroticism might influence the occurrence of partnership-related events, but not their timing and combination over time (i.e., sequencing). This suggests that it might be worthwhile to combine analytical perspectives on the timing and sequencing of partnership related events on the one hand and on the occurrence of events on the other hand. In this way, we might get a better picture of the connection between personality traits and partnerships within life courses.

My research has several limitations. First, I used a young sample and focused on early stages of partnership development, for which partnerships might be less serious than for older adults. Therefore,

the effects found might be to some extent limited to younger respondents and to early intimate partnerships. Further research applying longitudinal methods to older samples would be valuable to evaluate whether the effects can also be found for more institutionalized partnerships. Because the analyses were already very comprehensive (many potential influences examined theoretically and empirically), I had to limit my perspective in several ways. I for example did not deduct gender-specific hypotheses, even if some of the prior results reported were gender-specific. I furthermore did not include interaction effects between different personality traits of the respondent nor between the two partners within a partnership, which are likely to contribute to stability and/or institutionalization of partnerships. Further analyses focusing (more) on these interaction effects and gender specific questions are therewith needed. Finally, I could not consider potential influences of partnership experiences on personality within the observation period (for example in the form of maturation, see Asselmann & Specht, 2020, for recent research results and an overview about prior research). First experiences within partnerships could potentially influence behavior and further partnership development directly or be mediated through changes in personality. Therefore, it would be valuable to include personality traits as time-varying covariates within more complex models of influences on partnership transitions and dynamics. Further analysis using techniques modelling the influence of information collected in panel waves onto the subsequent development of trajectories (see Piccaretta & Studer, 2018 for an overview) could be used. These were however not useful in this study because some of our core variables (personality traits) are only evaluated in selected waves of PAIRFAM.

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Appendix

	Data-Set A (for sequence analysis)	Data-Set B (all without partnership)	Data-Set C (all with partnership, but not in cohabitation)
Extraversion	.75	.85	.86
Agreeableness	.54	.73	.74
Conscientiousness	.65	.79	.79
Neuroticism	.69	.82	.82
Openness	.67	.65	.65

Source: Pairfam, own calculations.

Table 4: Cronbach's alpha for different data sets and personality traits

Inwieweit treffen die folgenden Aussagen auf Sie persönlich zu? To what extent do the following statements apply to you?	
Extraversion	
Ich bin eher zurückhaltend, reserviert	per3i1 (reversed)
I am usually modest and reserved	
Ich bin begeisterungsfähig und kann andere leicht mitreißen	per3i6
I get enthusiastic easily and can motivate others easily	
Ich bin eher der stille Typ, wortkarg	per3i11 (reversed)
I tend to be the strong and silent type	
Ich gehe aus mir heraus, bin gesellig	per3i16
I am extroverted	
Agreeableness	
Ich neige dazu, andere zu kritisieren	per3i2 (reversed)
I tend to criticize others	
Ich schenke anderen leicht Vertrauen, glaube an das Gute im Menschen	per3i7
I trust others easily and believe that people are inherently good	
Ich kann mich kalt und distanziert verhalten	per3i12 (reversed)
I can be cold and distanced in my behavior	
Ich kann mich schroff und abweisend anderen gegenüber verhalten	per3i17 (reversed)
I can be gru and dismissive with others	
Coscientiousness	
Ich erledige Aufgaben gründlich	per3i3
I complete my tasks thoroughly	
Ich bin bequem und neige zur Faulheit	per3i8 (reversed)
I make things comfortable for myself and tend to be lazy	
Ich bin tüchtig und arbeite flott.	per3i13
I am procient and work quickly	
Ich mache Pläne und führe sie auch durch	per3i18
I make plans and carry them out	
Neuroticism	
Ich werde leicht deprimiert, niedergeschlagen	per3i4
I easily become depressed or discouraged	
Ich bin entspannt, lasse mich durch Stress nicht aus der Ruhe bringen	per3i9 (reversed)
I am relaxed and don't let myself be worried by stress	
Ich mache mir viele Sorgen	per3i14
I am relaxed and don't let myself be worried by stress	
Ich werde leicht nervös und unsicher	per3i19
I easily become nervous and insecure	
Openness for experiences	
Ich bin vielseitig interessiert	per3i5
I am interested in many different kinds of things	
Ich bin tiefsinnig, denke gerne über Sachen nach	per3i10 (reversed)
I am intellectual and like to contemplate things	
Ich habe eine aktive Vorstellungskraft, bin phantasievoll	per3i15
I am very imaginative	
Ich schätze künstlerische und ästhetische Eindrücke	per3i20
I appreciate artistic and aesthetic impressions	
Ich habe nur wenig künstlerisches Interesse	per3i21
I am hardly interested in art	

Table 5: Items used to identify the big five personality traits based on BFI-L (suggested by Rammstedt & John, 2005)
Source: Pairfam Codebooks. Part of the scales are reversed, so that all scales within one item have the same direction