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**THE DARK TRIAD IN ADULT SIBLING DYADS**

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*Abstract*

This study investigated the degree of similarity / dissimilarity between adult siblings' Dark Triad scores. 94 sibling pairs participated in the study. The mean age of the older siblings in each pair was 23.3 (19–36). Mean age of the younger siblings: 20.47 (18–30). The methods included a Dark Triad diagnostic questionnaire (the Russian version of the Dirty Dozen) and the Short Portrait Big Five Questionnaire (BF-10). The participants completed each questionnaire twice: first to rate themselves, and then to rate their sibling. The goal of the study was to compare the participants' perception of themselves (self-ratings), their siblings (ratings of siblings), and their siblings' perception of themselves (ratings by siblings), and to evaluate the degree of similarity between siblings' self-ratings and ratings by siblings. We demonstrated that siblings' self-ratings of Dark Triad traits do not significantly differ from ratings by siblings and of siblings. The intra-pair similarity of Dark Triad traits for self-ratings and ratings by siblings was shown to be low. The structure of the interrelations between traits is similar for older and younger siblings; however, there are some differences depending on who is rating the dark personality traits, the participant or his/her sibling. Ratings by siblings were shown to have higher correlations between Dark Triad traits as well as between the Dark Triad and the Big Five; thus, the coincidence of Dark Triad traits seems to be more pronounced to an external viewer than seen in self-ratings.

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**Keywords:** Machiavellianism, narcissism, psychopathy, siblings, self-ratings, ratings by siblings.



## 1. Introduction

Negative personality traits associated with violations of moral norms, proneness to conflict, and the inability to maintain long-term relationships have always attracted scholars analyzing interpersonal relationships. In the last decade and a half, the studies of interpersonal relationships have especially focused on the Dark Triad of personality traits. The Dark Triad is a constellation of three interlinked personality constructs: Machiavellianism, subclinical narcissism and subclinical psychopathy (Paulhus & Williams, 2002). They all correlate with two basic personality traits, namely, low Agreeableness and low Honesty/Humility (Muris, Merckelbach, Otgaar, & Meijer, 2017), antisocial behaviors (Jonason, Strosser, Kroll, Duineveld, & Baruffi., 2015; Pailing, Boon, & Egan, 2014), the violation of social and moral norms (Arvan, 2013; Campbell et al., 2009; Egan, Hughes, & Palmer, 2015; Jonason, Girgis, & Milne-Home, 2017), and a tendency toward lies and deception (Azizli et al., 2016; Baughman, Jonason, Lyons, & Vernon, 2014).

It would be quite logical to presume that aversive traits associated with egotism, cynicism, superiority complexes, callousness, and manipulation would be neither attractive nor conducive to long-term relationships. Indeed, dark personalities are less frequently observed to maintain long-lasting friendships, amicable relationships with co-workers, or stable romantic relationships that evolve into marriage (Jonason, Zeigler-Hill, & Okan, 2017; Jonason, Luevano, & Adams, 2012). The carriers of the Dark Triad traits are oriented toward individual agency, leading either to the selection of a prestigious partner whose status can be exploited for personal gains, or else toward skewed familial and friendly relationships, in the course of which the partner becomes the object of exploitation, bullying, aggression, and violence (Baughman, Dearing, Giammarco, & Vernon, 2012; Jonason & Kavanagh, 2010; Jonason & Schmitt, 2012; Kiire, 2017; Lee et al., 2013). Due to their emotional coldness and tendency toward exaggerated control, their relationships with children are also frequently negative (Jonason, Lyons, & Bethell, 2014). There is much evidence pointing to the fact that dyads and groups that include “dark” personalities are associated with a higher probability of dissatisfaction with relationships, conflict, and, eventually, the disintegration of the relationship.

At the same time, not every group can be easily abandoned. A person who becomes the object of bullying on the part of a co-worker does not always have the opportunity to quickly end this humiliating situation by quitting and forever saying goodbye to the perpetrator. We chose to study sibling dyads as an example of a relationship that cannot be easily abandoned.

Sibling dyads are distinct from others on a number of counts. They are not voluntarily chosen: the frequency of contact and the degree of closeness are subject to choose, but the contact itself, at least up until adult age, is a part of the family relationship and cannot be completely avoided. Constant contact over the span of many years results in the formation of well-founded expectations of one another’s psychological characteristics and possible reactions to a variety of situations. The duration of the relationship can determine the characteristic aspects of the correspondence of negative personality traits among siblings; for instance, to encourage similarity with respect to negative traits, or to result in reciprocity (one sibling constantly submits to the other, gives in to demands, and does not see any hope for change).

## 2. Problem Statement

Dyadic relationships are the most common type of interpersonal communication and interaction and are used in psychological studies as primary structures for the analysis of the entire variety of social relationships. The word “dyad” itself implies not only a group of two persons, but also interaction and even a symbiotic relationship. And yet earlier studies of dyads for a long time had viewed the traits of dyad members as independent from one another (at least when conducting statistical analysis).

In the 1990s, the first conjectures began to be voiced about the independence of dyad members being an assumption that is only legitimate in certain stages of studying relationships and must be overturned in modern research. In the formative stage of a dyadic relationship, frequently it’s the dyad members’ similarity in terms of certain traits that serves as the reason for the inception of the relationship, its duration, and the degree of satisfaction it brings. As a result, studies on dyads can frequently violate one of the main postulates of statistical analysis about the independence of observations (or observed parameters). As a potential alternative, there have been suggestions for data analysis based on the postulate of interdependence of dyad members’ psychological traits (Kenny & Cook, 1999; Kenny, Kashy, & Cook, 2006).

The actor-partner interdependence model is used for analyzing causal relationships in a dyad. Applying it proved to be quite informative, for instance, when studying romantic and matrimonial relationships (Donato et al., 2015). However, the results of applying the actor-partner interdependence model can be marked by significant uncertainty due to the way the information about dyadic partners is obtained (Orth, 2013). Consequently, the usage of this model must be preceded by an analysis of the results of self- and other ratings.

## 3. Research Questions

The aim of the study was to juxtapose how participants see themselves (self-ratings), their siblings (ratings of siblings), and are seen by siblings (ratings by siblings).

The following questions were asked in the course of the study:

- Do the Dark Triad means differ for older and younger siblings?
- Does a subject’s self-rating correspond to his or her sibling’s perception of his or her negative traits?
- Does the intra-pair similarity of the siblings differ in terms of self-ratings and ratings by siblings of negative personality traits?
- Do the correlations of self-ratings and ratings by siblings of Dark Triad traits differ from the self-ratings of the Big Five personality traits?

We conjectured that the negative personality traits investigated in this study (Machiavellianism, narcissism, and psychopathy) are unlikely to be influenced by birth order; however, the birth order of a sibling (older vs. younger) might affect the perception of negative personality traits, intra-pair sibling similarity, and the structure of Dark Triad correlations.

## 4. Purpose of the Study

The analysis of the differences between self-ratings and ratings by sibling ratings is a preparatory stage for the actor-partner analysis of the Dark Triad traits.

## 5. Research Methods

### 5.1. Participants

94 adult pairs of siblings took part in the study. The mean age of the older siblings was 23.3, SD=3.47, range: 19–36. The mean age of the younger siblings was 20.47, SD=2.76, range: 18–30.

### 5.2. Methods

The researchers met with every participant individually. Every participant was asked to complete two questionnaires twice:

- The Russian version of the Dark Triad Dirty Dozen (Jonason & Webster, 2010). The questionnaire includes 12 statements (4 each for each of the Dark Triad scales: Machiavellianism, narcissism, and psychopathy) and is rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).
- Short Portrait Big Five Questionnaire (BF-10) (Egorova & Parshikova, 2016). Each of the five factors is detected in two portraits. The participant must evaluate his or her similarity to a portrait on a 6-point Likert scale ranging from 1 (not at all alike) to 6 (very much alike).

Every questionnaire was filled out by every participant twice. The first time the participant was asked to rate themselves, the second time, their sibling (“Please envision your brother’s (sister’s) answer to this question”).

## 6. Findings

The mean scores for Machiavellianism, narcissism, and psychopathy, obtained as a result of self-ratings and ratings by sibling, are summarized in Table 01. Siblings rate themselves similarly (see columns 1 and 2 in Table 01): there are no significant differences for any of the three dark personality traits. There are also no significant differences for the ratings by sibling (columns 3 and 4). Thus, older and younger siblings exhibit similarities in terms of Dark Triad traits and in terms of how they see their sibling’s Dark Triad traits.

**Table 01.** The means and standard deviations for Dark Triad traits (self-ratings and ratings by sibling)

Dark Triad	Self-ratings		Older sibling (ratings by the younger sibling)	Younger sibling (ratings by the older sibling)
	Older sibling	Younger sibling		
Machiavellianism	2.3 (0.81)	2.33 (0.86)	2.38 (0.92)	2.53 (0.78)
Narcissism	2.94 (0.88)	2.83 (0.84)	2.87 (0.84)	2.92 (0.86)
Psychopathy	2.7 (0.84)	2.78 (0.89)	2.61 (0.83)	2.65 (0.77)

In order to define the interrelations between Dark Triad traits, we calculated the correlations (Spearman  $r$ ) between Machiavellianism, narcissism, and psychopathy for self-ratings and ratings by sibling

(see Table 02). In every case, the least close correlations were established for narcissism and psychopathy; notably, for the self-rating of the older sibling, the correlation coefficient is below the significance threshold. The correlations of self-ratings are lower than for ratings by sibling, although the level of significance is different only for narcissism. Thus, when rating each other, siblings tend to see more resemblance between the dark traits than when rating themselves.

When comparing intra-pair similarity of Dark Triad traits between siblings (Table 03), we considered the following factors: to what degree do self-ratings correlate with the ratings by sibling; are there similarities between the self-ratings of siblings; are there similarities between the ratings of and by siblings.

The rating of an older sibling by the younger sibling is quite distinct from the older sibling's self-rating: The correlation coefficient between the self-rating and the rating by sibling for psychopathy was not significant, while for Machiavellianism and narcissism it was below 0.3 (column 1).

The rating of a younger sibling by the older sibling is closer to the younger sibling's self-rating. Thus, the correlation between self-rating and the rating-by-sibling for Machiavellianism and psychopathy is above 0.4 (column 2). In other words, the older sibling has a better understanding of the younger sibling than the younger sibling has of the older sibling.

**Table 02.** Interrelations between Dark Triad traits and Cronbach's Alpha (along the table diagonal)

Dark Triad	Older sibling (self-rating)			Younger sibling (self-rating)		
	M	N	PP	M	N	PP
Machiavellianism	0.67	0.29**	0.44**	0.66	0.41***	0.37***
Narcissism		0.64	0.16		0.66	0.22*
Psychopathy			0.51			0.59
Dark Triad	Older sibling (ratings by the younger sibling)			Younger sibling (ratings by the older sibling)		
	M	N	PP	M	N	PP
Machiavellianism	0.83	0.50***	0.51***	0.60	0.64***	0.50***
Narcissism		0.74	0.25**		0.74	0.37***
Psychopathy			0.64			0.47

Note: \*\* –  $p < 0.01$  \*\*\* –  $p < 0.001$ ; M – Machiavellianism, N – narcissism, PP – psychopathy

The correlation between self-ratings (column 3) and correlation between ratings-by-sibling (column 4) are low, with significance at 0.05 level only in one case (for the self-ratings of Machiavellianism).

**Table 03.** The intra-pair similarity between 1) siblings' mutual ratings of each other, 2) self-ratings, 3) and ratings by sibling, (Spearman's  $r$ )

Dark Triad	Older sibling (self-ratings of older sibling and ratings by the younger sibling)	Younger sibling (self-ratings of younger sibling and ratings by the older sibling)	Self-ratings	Ratings by siblings
Machiavellianism	0.29**	0.43***	0.23*	0.17
Narcissism	0.23*	0.27**	0.06	0.14
Psychopathy	0.18	0.41***	0.03	0.10

Note: \* –  $p < 0.05$  \*\* –  $p < 0.01$  \*\*\* –  $p < 0.001$

When comparing the Dark Triad with the Big Five traits (Neuroticism, Extraversion, Openness to Experience, Agreeableness and Conscientiousness), the results obtained from the self-ratings of the older and younger sibling show similarity (Table 04): for both siblings, Machiavellianism and psychopathy are negatively correlated with Agreeableness (for younger siblings, this also includes Conscientiousness). Narcissism is positively correlated with Extraversion and Openness to Experience (for the older siblings, also with Neuroticism).

Ratings by siblings display more correlation with the Dark Triad traits than self-ratings (see Table 04). All Dark Triad scores for both siblings are negatively correlated with Agreeableness. For the younger siblings, all Dark Triad scores are negatively correlated with Conscientiousness (it's only Machiavellianism for the older siblings). In both the older and younger siblings, Neuroticism positively correlates with narcissism (older siblings also display a positive correlation with Machiavellianism). Both the older and younger siblings show a positive correlation between Extraversion and narcissism (the younger siblings also show a positive correlation with Machiavellianism). Thus, the ratings by siblings show interrelations between the Dark Triad and the Big Five scores that demonstrate more unity between Machiavellianism, narcissism and psychopathy than evident from the data obtained from the self-ratings. The same results were obtained in the course of the same kind of correlation analysis of the Dark Triad scores. In other words, an external observer, a sibling in this case, tends to see more similarity between Dark Triad traits than the person rating him- or herself.

**Table 04.** Correlations between Dark Triad and Big Five traits

Dark Triad	Neuroticism	Extraversion	Openness	Agreeableness	Conscientiousness
Older sibling (self-ratings)					
Machiavellianism	0.08	-0.08	0.05	-0.35***	-0.19
Narcissism	0.20*	0.29**	0.34***	0.00	-0.11
Psychopathy	-0.09	-0.06	-0.04	-0.38***	-0.09
Younger sibling (self-ratings)					
Machiavellianism	0.02	0.12	-0.14	-0.34***	-0.21**
Narcissism	0.05	0.31**	0.23*	-0.05	-0.06
Psychopathy	-0.10	-0.18	-0.11	-0.46***	-0.22*
Older sibling (ratings by the younger sibling)					
Machiavellianism	0.27**	0.10	-0.09	-0.52***	-0.33***
Narcissism	0.24*	0.29**	0.20	-0.22*	-0.02
Psychopathy	0.08	0.10	-0.16	-0.50***	-0.16
Younger sibling (ratings by the older sibling)					
Machiavellianism	0.02	0.26**	0.09	-0.28**	-0.25**
Narcissism	0.26**	0.23*	0.14	-0.36***	-0.33***
Psychopathy	0.14	-0.04	-0.05	-0.41***	-0.21*

Note: \* – p<0.05 \*\* – <p<0.01 \*\*\* – p<0.001

## 7. Conclusion

In our study, we had investigated various ways for obtaining information about Dark Triad traits in the same group of subjects: using self-ratings, ratings of siblings, and ratings by siblings. Based on an analysis of the means, intra-pair similarity, and the structure of interrelations, the following conclusions can be drawn:

- Dark Triad means (as assessed per self-ratings, ratings of siblings, and ratings by siblings) do not differ for the older and younger siblings.
- The degree of similarity between self-rating and rating by sibling differ between the members of the same dyad.
- The intra-pair similarity of siblings in terms of Dark Triad traits is low both when comparing self-ratings and ratings by sibling.
- When rating a sibling, a subject tends to see more similarity between Dark Triad traits than when rating him- or herself; it is demonstrated by the level of interrelations between Machiavellianism, narcissism, and psychopathy, as well as in the structure of interrelations between the Dark Triad and the Big Five.

Overall, when investigating the Dark Triad in adult sibling dyads, differences were obtained between self-ratings, ratings of siblings, and ratings by siblings, demonstrating that the difference in results owes less to the distinct personalities of the subject/object of the rating, and more to the difference between the perception of oneself and that of another, which we consider important for the applications of the actor-partner interdependence model.

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