



Research Article

Disintegration predicts problem alcohol and drug use, quality of life, and experience in close relationships over the Big Five and HEXACO personality traits¹

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ABSTRACT

The Disintegration trait (i.e., proneness to psychotic-like experiences and behaviors) was recently proposed as the basic personality trait that supplements the space of individual differences framed by well-known Big Five and HEXACO models. In this research, we provided additional evidence of the unique contribution of Disintegration in predicting the individual differences in some outcomes whose relations with this trait are mainly unexplored. In the first study (N = 300), we employed a 20-item measure of Disintegration (DELTA-20), a short form of the Big Five Inventory (BFI-10), alcohol and drug use disorders identification tests (AUDIT, DUDIT), and Flanagan's Quality of Life Scale (QoLS).

¹ A part of the results from the Study 1 was presented at the conference; see the reference:

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The results showed that Disintegration predicts higher levels of problem alcohol and drug use, and lower quality of life, over and above the Big Five traits, thus increasing the proportion of explained variance by 3% and 1%, respectively. In the second study (N = 537), we used a 10-item measure of Disintegration (DELTA-10), a 60-item form of HEXACO, and a Serbian version of the Modified and Revised Experiences in Close Relationship scale (SM-ECR-R). The results showed that Disintegration predicts higher levels of avoidance and anxiety in close relationships over and above HEXACO traits, with an incremental contribution in the explained variance of 2% and 11%, respectively. In sum, our findings suggested that the Disintegration trait, assessed by either the shorter or longer measure, accounts for unique variance in individual, wellbeing-related outcomes, and dyadic functioning-related outcomes. The limitations and future directions are discussed.

Keywords: Schizotypy, Personality traits, Substance use, Quality of life, Adult attachment

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Introduction

Disintegration and basic personality traits

Psychosis proneness, psychotic-like, and schizophrenia-spectrum symptoms are some of the terms found in the literature used to mark schizotypal features. Even though these manifestations are usually seen as a part of disorders, a body of literature points out that these features are arrayed along a broad continuum – from normal and subclinical variations to clinical manifestations – and, accordingly, some scholars claim they should be considered a personality trait (see Edmundson et al., 2011; Kwapil & Barrantes-Vidal, 2015; Watson et al., 2008). Recently, Knežević et al. (2017) introduced the Disintegration trait as a (re)conceptualization of psychosis proneness features. This trait, normally distributed in the general population, encompasses nine sub-traits: perceptual distortions, magical thinking, enhanced awareness, paranoia, mania, flattened affect, somatoform dysregulations, depression, and general executive impairment. Their approach in framing these features was based on a series of factor analyses of almost one thousand indicators/items found in various measures of schizotypal, schizophrenia-spectrum, and psychotic phenomena. For that reason, the sub-traits of Disintegration are fairly parallel to certain dimensions or fall under the factors found in other models. More precisely, perceptual distortions, magical thinking, enhanced awareness, paranoia, and somatoform dysregulations represent the positive, flattened affect refers to the negative, and general executive impairment represents the disorganized dimension of schizotypy (see Debbané & Barrantes-Vidal, 2015; Kwapil et al., 2018). The rest two sub-traits of Disintegration – depression and mania – correspond to emotional distress and excitement factors of schizophrenia-spectrum symptoms, respectively (see van der Gaag et al., 2006). Although Disintegration is a complex construct, the core features of the trait can be understood, largely simplified, as the tendency to see connections between seemingly unrelated phenomena (Knežević et al., 2017), whether such relations could truly exist or not. Disintegration trait was proposed as the

measure of individual differences, related to but irreducible to the Big Five (Knežević et al., 2016) and HEXACO models (Knežević et al., 2022).

A traditional view on the nature of personality subsumes that the broad space of individual variations could be presented by five (i.e., *the Big Five model*, McCrae & John, 1992; *the Five-Factor model*; Goldberg, 1990) or six basic personality traits (i.e., the HEXACO model; Lee & Ashton, 2004), depending on the model of reference. In both cases, Extraversion refers to liveliness, positive emotions, and enjoyment in social interactions, the Agreeableness trait pertains to kindness and compliant attitudes toward others, while Conscientiousness subsumes self-discipline, achievement orientation, and planning. Openness to experience is the domain that comprises intellectual and artistic aspirations. Even though these traits are labeled the same way in concurrent models, the content they cover is somewhat different (see Lee et al., 2005), which we will not elaborate on in detail. However, the difference between Neuroticism from the Big Five (or Emotional stability, as an inversely directed dimension, sometimes labeled so in five-factorial measures) and Emotionality from the HEXACO is worth noting. While Neuroticism subsumes emotional instability, the propensity to experience negative emotions and to react with anger and impulsive acts (DeYoung et al., 2007), Emotionality mainly pertains to proneness to feel fear and anxiety and the need for emotional support (Lee & Ashton, 2018). Lastly, Honesty-humility, the dimension unique to the HEXACO model, describes selfish, manipulative, and rule-breaking tendencies, therefore, is primarily relevant in explaining the dark side of personality and criminal behavior (Međedović, 2014a; Nedeljković & Tucaković, 2022).

The outcomes related to Disintegration and basic personality traits

A body of literature showed that basic personality traits have a firm potential to explain individual differences in everyday behavior, experiences, and the outcomes related to an individual or their connections with others. For example, Neuroticism was found to be related to maladaptive emotion-focused coping (Agbaria & Mokh, 2022), elevated reactivity to daily stressors

(Bolger & Schilling, 1991), alcohol and drug use (Sher et al., 2000), poorer self-perceived quality of life (Steel et al., 2008), marital quality and satisfaction with marriage (Lavee & Ben-Ari, 2004). Extraversion and Agreeableness are related to subjective well-being, higher social support, and higher satisfaction in relationships with family, friends, and emotional partners (Swickert et al., 2010; Tov et al., 2016). Conscientiousness was found to be associated with academic achievement (Chamorro-Premuzic & Furnham, 2003), avoiding risk behaviors, planning, and future concerns (Roberts et al., 2005), friendship quality (Lansford et al., 2014), and less avoidance and anxiety in close relationships (Stanković et al., 2022). Lastly, Openness to experience was shown to be related to divergent thinking, creative achievements in arts and science, and risk-taking (Kaufman et al., 2016; Nicholson et al., 2005).

For a vast majority of the abovementioned outcomes, there is no data on their relationship with Disintegration. On the other hand, there are some findings from the studies that used other measures of schizotypy. There is evidence that high (positive) schizotypy longitudinally predicts poorer social adjustment and increases the chances of alcohol and drug abuse/dependence (Kwapil et al., 2013). Also, there are cross-sectional findings that schizotypy is associated with lower satisfaction with life (Abbott et al., 2012). However, when it comes to dyadic functioning, there are available data on Disintegration. Stanković et al. (2022) reported that Disintegration is positively related to avoidance and anxiety in close relationships, although they have not addressed the relative importance of these connections compared to other personality traits. In contrast, some research that used the Disintegration model of schizotypy provided a piece of valuable knowledge on the incremental validity of this trait. For example, there are findings that Disintegration improves the Five-Factor model in discriminating all personality disorders (Šaula-Marojević, 2012) and predicts subclinical narcissism over and above the Big Five traits (Lazarević et al., 2021). Some other studies indicated this trait accounts for unique variance, not captured by the HEXACO model, in lower academic achievement (Janošević & Petrović,

2018) and a higher propensity to non-committal and diverse sexual activities (Dinić & Knežević, 2009).

Present research aim and hypothesis

Previous studies provided valuable knowledge on the relationship between Disintegration and a broad set of relevant outcomes. Considering the theoretical background of the trait, we might assume there are many psychological phenomena in which Disintegration could have a role. Therefore, we selected some of the variables whose relations with the Disintegration trait are not yet clear enough. In this research, we examine whether Disintegration could have a unique contribution in explaining the variance in two different types of outcomes if the basic personality traits from two traditional models are taken into account. Study 1 addresses the issue of whether Disintegration can explain the unique variance in individual-level, wellbeing-related outcomes (problem alcohol and drug use and quality of life) over and above the Big Five model. Study 2 focuses on whether Disintegration can explain the unique variance in dyadic-level functioning outcomes (avoidance and anxiety in close relationships) over and above the HEXACO model. In the cause of increasing the robustness of the findings, apart from varying the model of basic personality traits, we also vary the assessment of Disintegration by applying the longer and the shorter form of the instrument in Studies 1 and 2, respectively. Although examining the role of Disintegration is our primary aim, we are almost equally focused on the relationships between basic personality traits and the outcomes, including the possible influence of Disintegration on these associations. For both studies, we hypothesized that Disintegration would predict the outcomes over and above the basic personality traits.

Study 1

Participants and procedure

The study involved 300 participants (aged 18 to 68, 71% females). The data was collected online using the *Google Forms* platform. The participants were invited to participate in the research via social networks. All participants joined the study anonymously and voluntarily and provided informed consent. The study was conducted in line with the 1964 Declaration of Helsinki and its later amendments.

Instruments

Big Five Inventory (BFI-10)

The 10-item Big Five Inventory (BFI-10; Rammstedt & John, 2007; for Serbian adaptation see Pejić et al., 2014) was used to measure Extraversion, Neuroticism, Agreeableness, Conscientiousness, and Openness. Each trait was assessed by the two items given on a 5-point scale (from 1 = *strongly disagree* to 5 = *strongly agree*).

DELTA instrument

Disintegration was assessed by the DELTA instrument (Knežević et al., 2017). This measure includes 20 items (e.g., "*Sometimes I have an impression that my feelings are frozen*") given on a 5-point scale (from 1 = *strongly disagree* to 5 = *strongly agree*).

The AUDIT (Alcohol Use Disorders Identification Test)

The AUDIT (Alcohol Use Disorders Identification Test; Babor et al., 2001) was used to assess problem alcohol use. The questions refer to the frequency and quantity of alcohol consumption, binge drinking, and negative consequences of alcohol use. Respondents give their answers to eight questions (e.g., "*How often do you have a drink containing alcohol?*") on a 5-point scale (from 0 = *never* to 4 = *four or more times a week*) and two questions (e.g., "*Have you or*

someone else been injured because of your drinking?") on a 3-point scale (0 = *no*; 2 = *yes, over the last year*; 4 = *yes, over the last year*).

The DUDIT (Drug Use Disorders Identification Test)

The DUDIT (Drug Use Disorders Identification Test; Berman et al., 2004) was used to assess problem drug use. This measure contains 11 items related to the frequency of drug use, drug-related behavior, and drug-related consequences. Nine questions (e.g., *"How often do you use drugs other than alcohol?"*) are given on a 5-point scale (from 0 = *never* to 4 = *four or more times a week*), and two questions (e.g., *"Have you or anyone else been hurt [mentally or physically] because you used drugs?"*) are given on a 3-point scale (0 = *no*; 2 = *yes, over the last year*; 4 = *yes, over the last year*).

Flanagan's QoLS (Quality of Life Scale)

Flanagan's QoLS (Quality of Life Scale; Flanagan, 1978) was used to assess the perception of the quality of life. The measure includes 15 items with the instruction for respondents to estimate on a 7-point scale (from 1 = *terrible* to 7 = *delighted*) how satisfied they are with each activity or relationship (e.g., *"Relationships with parents, siblings, and other relatives – communicating, visiting, helping"*).

The AUDIT, the DUDIT, and the QoLS were translated into Serbian by the first author for the purpose of this study. Minor ambiguities were resolved by consultation with the external collaborator, fluent in English.

The scores in all scales were calculated as the mean of responses on corresponding items, whereby in all cases, higher scores denote the higher values of the variables as labeled. Means, standard deviations, and Cronbach alphas are presented in Appendix A.

Results

After the initial correlation analysis (see also Appendix A), we conducted three multiple regressions with problem use of alcohol and drugs and perceived quality of life as the criterion variables. In each case, the Big Five traits were entered as predictors (along with the sex and age to control their

effect) in the first step, while Disintegration was included in the second step. The results of the regressions are summarized in Table 1.

Table 1

The contribution of Disintegration to explaining problem alcohol and drug use, and quality of life over and above the Big Five traits

	Alcohol use (β)		Drug use (β)		Quality of life (β)	
	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2
Sex (male)	.32**	.30**	.37**	.35**	-.04	-.03
Age	-.13*	-.13*	.14*	.14*	-.14**	-.14**
Extraversion	.14*	.16**	.07	.09	.22**	.21**
Neuroticism	.00	-.04	-.02	-.07	-.34**	-.30*
Agreeableness	-.09	-.05	-.08	-.04	.14**	.12*
Conscientiousness	-.20**	-.17**	-.14*	-.11*	.28**	.26**
Openness	-.04	-.04	-.08	-.09	.11*	.11*
Disintegration		.19**		.19**		-.12**
F	8.11**	8.55**	11.33**	10.81**	23.36**	21.49**
R^2	.16	.19	.21	.24	.36	.37
ΔR^2		.03**		.03**		.01*

Note. Sex is coded as Female = 0; Male = 1; R^2 – squared multiple correlation; ΔR^2 – change of squared multiple correlation; ** $p < .01$; * $p < .05$.

Male sex, younger age, higher Extraversion, and lower Conscientiousness were predictive of a higher level of problem alcohol use and explained about 16% of the criterion variance. The Disintegration trait, included in the second step, was shown to be predictive of a higher level of problem alcohol use, over and above the Big Five traits. Similarly, problem drug use was predicted by the male sex, older age, and low Conscientiousness in the first step of analyses, which accounted for about 21% of the criterion variance. As in the case of problem alcohol use, the Disintegration trait, included in the next step, was shown to have a unique contribution in explaining the criteria (3% of the

incremental variance in both cases). Interestingly, all personality traits from the Big Five model were the significant predictors of perceived quality of life (36% of the variance explained). This criterion was negatively predicted by age and Neuroticism and positively by all other traits. Disintegration predicted the perceived quality of life negatively, and the additional contribution in explaining the variance was quite small (1%), although significant.

Study 2

Participants and procedure

The sample involved 537 participants (aged 18 to 58, 51.5% females), recruited in the same way as described in Study 1. All participants joined the study anonymously and voluntarily and provided informed consent. The study was conducted in line with the 1964 Declaration of Helsinki and its later amendments.

Instruments

HEXACO Personality Inventory (HEXACO-60)

The 60-item HEXACO Personality Inventory (HEXACO-60; Ashton & Lee, 2009; for Serbian adaptation see Međedović et al., 2019) was used to measure Extraversion, Emotionality, Agreeableness, Conscientiousness, Openness, and Honesty-humility. Each trait was assessed by the 10 items.

The 10-item form of the DELTA instrument (Knežević et al., 2017) was used to assess Disintegration.

Experiences in Close Relationships scale (SM-ECR-R)

A Serbian version of the modified and revised Experiences in Close Relationships scale (SM-ECR-R; Hanak & Dimitrijević, 2013) was used to assess two major dimensions of adult attachment: avoidance (e.g., "I prefer not to show how I feel deep down") and anxiety (e.g., "Sometimes persons with whom I feel close change their feelings about me for no about apparent reason"). Both dimensions were assessed by 18 items. This version of the

instrument assesses avoidance and anxiety experiences in close relationships in general, unlike the original one (ECR-R; Fraley et al., 2000), which is primarily directed to partnership relationships.

Items from all instruments were given on a 5-point scale (from 1 = *strongly disagree* to 5 = *strongly agree*). The scores were calculated as the mean of responses on corresponding items, whereby in all cases, higher scores denote the higher values of the variables as labeled. Means, standard deviations, and Cronbach alphas are presented in Appendix B.

Results

We employed the same approach as in Study 1 by conducting two multiple regressions with avoidance and anxiety as criterion variables, and personality traits, sex and age as predictors. The results of regression analyses (see Table 2) are generally aligned with the results of the initial correlation analysis (see Appendix B), thus indicating that the contribution of particular personality traits in explaining the variance in avoidance and anxiety is mostly unique.

Table 2

The contribution of Disintegration to explaining avoidance and anxiety in close relationships over and above the Big Five traits

	Avoidance (β)		Anxiety (β)	
	Step 1	Step 2	Step 1	Step 2
Sex (male)	-.12**	-.11**	-.07	-.30
Age	.06	.07	.00	.02
Extraversion	-.30**	-.25**	-.22**	-.13**
Emotionality	-.22**	-.25**	.22**	.16**
Agreeableness	-.15**	-.13**	-.06	-.02
Conscientiousness	-.12**	-.09*	-.14**	-.06
Openness	-.14**	-.16**	-.03	-.07*
Honesty-humility	-.08	-.03	-.22**	-.13**
Disintegration		.18**		.39**
F	16.05**	16.36**	20.33**	30.97**
R^2	.20	.22	.24	.36
ΔR^2		.02**		.11**

Note. Sex is coded as Female = 0; Male = 1; R^2 – squared multiple correlation; ΔR^2 – change of squared multiple correlation; ** $p < .01$; * $p < .05$.

Female sex, higher levels of Extraversion, Emotionality, Agreeableness, Conscientiousness, and Openness were predictive of lower avoidance in close relationships and explained about 20% of the variance in this criterion. The inclusion of the Disintegration trait in the second step accounted for an additional 2% of the variance, with a positive contribution coming from this trait. Higher Extraversion, Conscientiousness, Honesty-humility, and lower Emotionality were found to be predictive of lower anxiety in close relationships, accounting for a total of 24% variance explained. Disintegration contribution, observed after this trait was included in the second step, was positive and quite large (11% of the variance). It is important to notice an interesting phenomenon not found in predicting avoidance. Namely, the

inclusion of Disintegration resulted in the Conscientiousness contribution becoming insignificant and the Openness contribution becoming significant (and negative) in predicting the variance of anxiety.

Discussion

In this research, we aimed to provide additional evidence that Disintegration – a recently proposed but not widely recognized personality trait – is needed to supplement the variations in the broad space of individual differences usually seen through the lens of commonly used measures of basic personality traits such as the Big Five or the HEXACO. For that purpose, we selected some of the variables that could be theoretically considered as outcomes related to basic personality traits to test our hypothesis that Disintegration could have an incremental contribution in their prediction over and above other basic personality traits. To increase the representativeness and robustness of our findings, we employed the longer and the shorter measure of the Disintegration, combined with the Big Five and HEXACO models traits. Although we are primarily interested in the Disintegration role, our discussion as follows is comprehensive and clarifies the relations of the outcomes of interest with other personality traits as well.

In Study 1, problem alcohol and drug use, and perceived quality of life were used as criterion variables. Both addiction-related outcomes were predicted by high Disintegration and low Conscientiousness, while problem alcohol use was predicted by high Extraversion as well. There are several reasons why Conscientiousness might be associated with alcohol and drug use and related problems. People who score high on Conscientiousness are generally more responsible and self-disciplined and thus could be more able to resist the temptation to drink alcohol excessively, use psychoactive substances, or engage in risky behaviors. Accordingly, those individuals may be more likely to plan ahead and consider the potential consequences of their actions and therefore be less likely to engage in behaviors that could threaten their health or well-being. Indeed, previous studies support this consideration since they indicated that Conscientiousness is inversely related to alcohol and drug use

(Martens et al., 2009; Turiano et al., 2012). The contribution of Extraversion in predicting problem alcohol (but not drug) use is quite expected. The use of alcohol, in contrast to drug use, is far more culturally supported, to a greater extent acceptable, and even expected in social gatherings and parties. If we take into account that sociability and liveliness are one of the main aspects of Extraversion, then the positive contribution of this trait to problematic alcohol use seems quite reasonable. Previous findings also showed that Extraversion is associated with alcohol use and binge drinking (Cheng & Furnham, 2013). Lastly, the role of Disintegration in both problem alcohol and drug use is a pretty intriguing finding. Such predictive contribution could be seen primarily through the assumed influence of Disintegration (as personality disposition) on detrimental outcomes rather than *vice versa*. Of course, our consideration of this relationship in terms of possible influence does not come without support. Although there are some findings in psychiatric patients showing that alcohol and drug use could trigger psychosis and increase the level of psychotic symptoms (see Gicas et al., 2022), we need to take into account that Disintegration trait subsumes normal and pre-psychotic features. Therefore, the "self-medication" hypothesis (Khantzian, 1997) seems like a more appropriate explanation of this relationship. According to this hypothesis, individuals with high levels of schizotypy may use alcohol and drugs to alleviate distressing symptoms associated with their condition. Moreover, there is longitudinal evidence that (positive) schizotypy increases the chances of alcohol and drug abuse/dependence (Kwapil et al., 2013).

In predicting quality of life in Study 1, all personality traits had a unique contribution in the direction that could be expected considering the nature of this construct and previous findings on the Big Five traits (e.g., Hicks & Mehta, 2018; Sadiković et al., 2018). Neuroticism and Disintegration negatively predicted the quality of life, while the contribution of all other personality traits was positive. This profile indeed describes the "positive personality" structure (de la Iglesia & Castro Solano, 2018), which could be depicted through the relative absence of psychopathological symptoms and the

presence of (desirable) dispositions such as high Extraversion, Agreeableness, Conscientiousness, and Openness that together serve as the foundation of higher wellbeing (Ozer & Benet-Martínez, 2006).

In Study 2, we found that Disintegration predicted both avoidance and anxiety in close relationships. The negative contributions of Extraversion in predicting both variables indicated that introverted individuals have more tendencies to feel discomfort in close relationships. On the other hand, the results showed that those with high Emotionality are more likely to be less avoidant, probably due to their need for support, while at the same time, they are more likely to be more anxious in close relationships, which probably arises from their timidity. Our results also indicated that low Agreeableness and Conscientiousness predict higher avoidance. That finding could be seen as the product of antagonistic tendencies and less concern for own obligations and responsibilities toward others, which are the features found in the negative poles of these two traits, likely to be reflected in close relationships as well. The negative contribution of Openness in predicting avoidance is likely to arise from the need for closure, which is closely related to low Openness (Onraet et al., 2011). However, the negative contribution of this trait in predicting anxiety seems more intriguing because it occurs when Disintegration is included as a predictor. Some previous findings might help us understand this phenomenon. A nuanced exploration of HEXACO Openness domain facets showed that unconventionality is positively associated with Disintegration, while inquisitiveness is related to higher wellbeing (Tucaković & Nedeljković, 2022). Therefore, it is plausible to understand that Disintegration likely extracts the variance of unconventionality from Openness, so the remaining variance relates negatively with anxiety. On the other hand, the opposite effect was observed for Conscientiousness, which was found to predict anxiety negatively, whereas the unique contribution of this trait was absent if Disintegration was included. This phenomenon could be attributed to a positive relationship between these traits observed in this and earlier studies (e.g., Lazarević et al., 2021). Moreover, Međedović (2014b) showed that general executive dysfunction, which is one of the core features

of the Disintegration trait, is to some extent mapped on the negative pole of Conscientiousness. Therefore, Disintegration, which is quite stronger related to anxiety, might take over the variance that is not unique to Conscientiousness and result in this trait being a non-significant predictor.

The results of Study 2 are broadly aligned with previous findings on the relationship between basic personality traits and dimensions of adult attachment (see Fraley et al., 2011; Manson, 2015). However, we find it necessary to clarify in more detail the role of Disintegration. The incremental contribution in predicting avoidant tendencies could be seen as quite expected if we take into account previous findings which indicated that schizotypy is related to greater attachment avoidance (e.g., Goodall et al., 2015; Tiliopoulos & Goodall, 2009), mistrust (Ross et al., 2002) and antagonism (Edmundson et al., 2011). On the other hand, the strong relationship between Disintegration and anxiety, which led to the high predictive contribution, might be surprising at first glance. However, almost the same strength of correlation was obtained in a recent study that employed these two measures (Stanković et al., 2022). In contrast, the strength of attachment anxiety association with other measures of schizotypy was found to vary from poor (e.g., with constricted affect) to strong (e.g., with cognitive disorganization), depending on the measure used and different aspects of the trait they cover (see Meins et al., 2008; Tiliopoulos & Goodall, 2009). Looking back at the content of the Disintegration, we need to take into account that this model includes paranoia, which could be seen as an extreme form of distrust. Combined with an inevitable closeness that every relationship includes more or less, such a disposition is likely to create "push-pull" conflict, resulting in elevated anxiety that overwhelms the relationship experience.

Limitations

Our research indicated that Disintegration has an incremental contribution in predicting all the outcomes we explored. However, there are some limitations worth noting. Although the incremental contribution of Disintegration over the Big Five traits in Study 1 could be seen as questionable due to the different

breadth of measurement of the traits (i.e., Disintegration assessed by 20 items, and each of the Big Five traits assessed by two items), we could provide some arguments opposing such consideration. First, there are findings that BFI-10 has a sufficient measurement breadth, covering around 70% of the variance captured by the longer Big Five measures (Rammstedt & John, 2007). Second, as we mentioned earlier, our results regarding this measure are highly aligned with previous findings that used more comprehensive instruments and could be seen to reflect genuine relations. Third, all the Big Five traits, despite being assessed by the brief measure, had a unique contribution in predicting quality of life, and even so, Disintegration accounted for an additional variance. Anyway, we encourage future studies to replicate our findings by employing a more comprehensive measure of the Big Five or Five-Factor model. On the other hand, the potential shortcoming of using instruments with different measurement breadth does not apply to Study 2, where the HEXACO traits and Disintegration were assessed by ten items each – yet Disintegration predicted avoidance and anxiety in close relationships over and above the HEXACO model. Of course, non-probabilistic sampling, which resulted in relatively young samples, is also one of the limitations, in particular, because schizotypal features decrease with age in the general population. Therefore, the sample type restricts a broader generalization of the findings. Ultimately, we need to stress that the cross-sectional self-report design of both studies is one of the major limitations, particularly for concluding about Disintegration influence on the examined outcomes. Future studies that will apply, for example, follow-up or experience sampling design, are needed to provide a reliable basis for considering potential influence.

Conclusion

The research showed that Disintegration is related to higher levels of problem alcohol and drug use, lower quality of life, and more avoidance and anxiety in close relationships. Since there was an incremental contribution in predicting all those variables over and above basic personality traits from the Big Five or

HEXACO model, these associations could be considered substantial and robust. From the standpoint of personality assessment, we consider these findings as additional support for understanding Disintegration as the basic personality trait that captures the unique variance not framed by either the Big Five or the HEXACO and as a valuable supplement to these models with the incremental predictive role. Also, we need to conclude that our research showed that Disintegration could be seen as a trait equally important for two types of outcomes: individual, wellbeing-related such as problem alcohol and drug use, and quality of life; and dyadic functioning related, such as avoidance and anxiety in close relationships.

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Conflict of interest

We have no conflicts of interest to disclose.

Data availability statement

Data files are available upon a reasonable request.

References

- Abbott, G. R., Do, M., & Byrne, L. K. (2012). Diminished subjective wellbeing in schizotypy is more than just negative affect. *Personality and Individual Differences, 52*(8), 914–918. <https://doi.org/10.1016/j.paid.2012.01.018>
- Agbaria, Q., & Mokh, A. A. (2022). Coping with stress during the coronavirus outbreak: The contribution of Big Five personality traits and social support. *International Journal of Mental Health and Addiction, 20*(3), 1854–1872. <https://doi.org/10.1007/s11469-021-00486-2>
- Ashton, M. C., & Lee, K. (2009). The HEXACO-60: A short measure of the major dimensions of personality. *Journal of Personality Assessment, 91*(4), 340–345. <https://doi.org/10.1080/00223890902935878>
- Babor, T. F., Higgins-Biddle, J. C., Saunders, J. B., & Monteiro, M. G. (2001). *The alcohol use disorders identification test*. Geneva: World Health Organization.

- Berman, A. H., Bergman, H., Palmstierna, T., & Schlyter, F. (2004). Evaluation of the Drug Use Disorders Identification Test (DUDIT) in criminal justice and detoxification settings and in a Swedish population sample. *European Addiction Research*, 1(1), 22–31. <http://dx.doi.org/10.1159/000081413>
- Bolger, N., & Schilling, E. A. (1991). Personality and the problems of everyday life: The role of neuroticism in exposure and reactivity to daily stressors. *Journal of Personality*, 59(3), 355–386. <https://doi.org/10.1111/j.1467-6494.1991.tb00253.x>
- Chamorro-Premuzic, T., & Furnham, A. (2003). Personality predicts academic performance: Evidence from two longitudinal university samples. *Journal of Research in Personality*, 37(4), 319–338. [https://doi.org/10.1016/S0092-6566\(02\)00578-0](https://doi.org/10.1016/S0092-6566(02)00578-0)
- Cheng, H., & Furnham, A. (2013). Correlates of adult binge drinking: Evidence from a British cohort. *PLoS One*, 8(11), Article e78838. <https://doi.org/10.1371/journal.pone.0078838>
- de la Iglesia, G., & Solano, A. C. (2018). The Positive Personality Model (PPM): Exploring a new conceptual framework for personality assessment. *Frontiers in Psychology*, 9, 2027. <https://doi.org/10.3389/fpsyg.2018.02027>
- Debbané, M., & Barrantes-Vidal, N. (2015). Schizotypy from a developmental perspective. *Schizophrenia Bulletin*, 41(suppl_2), S386–S395. <https://doi.org/10.1093/schbul/sbu175>
- DeYoung, C. G., Quilty, L. C., & Peterson, J. B. (2007). Between facets and domains: 10 aspects of the Big Five. *Journal of Personality and Social Psychology*, 93(5), 880–896. <https://doi.org/10.1037/0022-3514.93.5.880>
- Dinić, B., & Knežević, G. (2009). Relacije seksualnog ponašanja i osobina ličnosti u kontekstu polnog dimorfizma [Relationships between sexual behavior and personality in the context of sexual dimorphism]. *Psihologija*, 42(3), 357–373. <https://doi.org/10.2298/PSI0903357D>
- Edmundson, M., Lynam, D. R., Miller, J. D., Gore, W. L., & Widiger, T. A. (2011). A five-factor measure of schizotypal personality traits. *Assessment*, 18(3), 321–334. <https://doi.org/10.1177/1073191111408228>
- Flanagan, J. C. (1978). A research approach to improving our quality of life. *American Psychologist*, 33(2), 138–147. <https://doi.org/10.1037/0003-066X.33.2.138>
- 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., 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>
- Gicas, K. M., Parmar, P. K., Fabiano, G. F., & Mashhadi, F. (2022). Substance-induced psychosis and cognitive functioning: A systematic review. *Psychiatry Research*, 308, 114361. <https://doi.org/10.1016/j.psychres.2021.114361>
- Goldberg, L. R. (1990). An alternative "description of personality": The Big-Five factor structure. *Journal of Personality and Social Psychology*, 59(6), 1216–1229. <https://doi.org/10.1037/0022-3514.59.6.1216>
- Goodall, K., Rush, R., Grünwald, L., Darling, S., & Tiliopoulos, N. (2015). Attachment as a partial mediator of the relationship between emotional abuse and schizotypy. *Psychiatry Research*, 230(2), 531–536. <https://doi.org/10.1016/j.psychres.2015.09.050>
- Hanak, N., & Dimitrijevic, A. (2013). A Serbian version of modified and revised Experiences in Close Relationships Scale (SM–ECR–R). *Journal of Personality Assessment*, 95(5), 530–538. <https://doi.org/10.1080/00223891.2013.778271>
- Hicks, R. E., & Mehta, Y. P. (2018). The Big Five, Type A personality, and psychological well-being. *International Journal of Psychological Studies*, 10(1), 49–58. <https://doi.org/10.5539/ijps.v10n1p49>
- Janošević, M., & Petrović, B. (2019). Effects of personality traits and social status on academic achievement: Gender differences. *Psychology in the Schools*, 56(4), 497–509. <https://doi.org/10.1002/pits.22215>
- Kaufman, S. B., Quilty, L. C., Grazioplene, R. G., Hirsh, J. B., Gray, J. R., Peterson, J. B., & DeYoung, C. G. (2016). Openness to experience and intellect differentially predict creative achievement in the arts and sciences. *Journal of personality*, 84(2), 248–258. <https://doi.org/10.1111/jopy.12156>
- Khantzian, E. J. (1997). The self-medication hypothesis of substance use disorders: A reconsideration and recent applications. *Harvard Review of Psychiatry*, 4(5), 231–244. <https://doi.org/10.3109/10673229709030550>
- Knežević, G., Lazarević, L. B., Bosnjak, M., & Keller, J. (2022). Proneness to psychotic-like experiences as a basic personality trait complementing the HEXACO model—A

preregistered cross-national study. *Personality and Mental Health*, 16(3), 244–262.

<https://doi.org/10.1002/pmh.1537>

Knežević, G., Lazarević, L. B., Bosnjak, M., Purić, D., Petrović, B., Teovanović, P., Opačić, G., & Bodroža, B. (2016). Towards a personality model encompassing a Disintegration factor separate from the Big Five traits: A meta-analysis of the empirical evidence. *Personality and Individual Differences*, 95, 214–222.

<https://doi.org/10.1016/j.paid.2016.02.044>

Knežević, G., Savić, D., Kutlešić, V., & Opačić, G. (2017). Disintegration: A reconceptualization of psychosis proneness as a personality trait separate from the Big Five. *Journal of Research in Personality*, 70, 187–201.

<https://doi.org/10.1016/j.jrp.2017.06.001>

Kwapil, T. R., & Barrantes-Vidal, N. (2015). Schizotypy: Looking Back and Moving Forward. *Schizophrenia Bulletin*, 41(2), S366–S373.

<https://doi.org/10.1093/schbul/sbu186>

Kwapil, T. R., Gross, G. M., Silvia, P. J., & Barrantes-Vidal, N. (2013). Prediction of psychopathology and functional impairment by positive and negative schizotypy in the Chapmans' ten-year longitudinal study. *Journal of Abnormal Psychology*, 122(3), 807–815.

<https://doi.org/10.1037/a0033759>

Kwapil, T. R., Gross, G. M., Silvia, P. J., Raulin, M. L., & Barrantes-Vidal, N. (2018). Development and psychometric properties of the Multidimensional Schizotypy Scale: A new measure for assessing positive, negative, and disorganized schizotypy. *Schizophrenia Research*, 193, 209–217.

<https://doi.org/10.1016/j.schres.2017.07.001>

Lansford, J. E., Yu, T., Pettit, G. S., Bates, J. E., & Dodge, K. A. (2014). Pathways of peer relationships from childhood to young adulthood. *Journal of Applied Developmental Psychology*, 35(2), 111–117. <https://doi.org/10.1016/j.appdev.2013.12.002>

Lavee, Y., & Ben-Ari, A. (2004). Emotional expressiveness and neuroticism: Do they predict marital quality? *Journal of Family Psychology*, 18(4), 620–627.

<https://doi.org/10.1037/0893-3200.18.4.620>

Lazarević, L. B., Knežević, G., & Bosnjak, M. (2021). Does the disposition towards psychotic-like experiences incrementally predict grandiose narcissism? Representative evidence from Germany. *Current Psychology*, 1–12.

<https://doi.org/10.1007/s12144-021-02112-9>

- Lee, K., & Ashton, M. C. (2004). Psychometric properties of the HEXACO personality inventory. *Multivariate Behavioral Research, 39*(2), 329–358. https://doi.org/10.1207/s15327906mbr3902_8
- Lee, K., & Ashton, M. C. (2018). Psychometric properties of the HEXACO-100. *Assessment, 25*(5), 543–556. <https://doi.org/10.1177/107319116659134>
- Lee, K., Ogunfowora, B., & Ashton, M. C. (2005). Personality traits beyond the Big Five: Are they within the HEXACO space? *Journal of Personality, 73*(5), 1437–1463. <https://doi.org/10.1111/j.1467-6494.2005.00354.x>
- Manson, J. H. (2015). Life history strategy and the HEXACO personality dimensions. *Evolutionary Psychology, 13*(1), 48–66. <https://doi.org/10.1177/147470491501300104>
- Martens, M. P., Karakashian, M. A., Fleming, K. M., Fowler, R. M., Hatchett, E. S., & Cimini, M. D. (2009). Conscientiousness, protective behavioral strategies, and alcohol use: Testing for mediated effects. *Journal of Drug Education, 39*(3), 273–287. <https://doi.org/10.2190/DE.39.3.d>
- McCrae, R. R., & John, O. P. (1992). An introduction to the five-factor model and its applications. *Journal of Personality, 60*(2), 175–215. <https://doi.org/10.1111/j.1467-6494.1992.tb00970.x>
- Međedović, J. M. (2014a). *Psihopatija, ličnost i kriminalni recidiv: multimetodski pristup*. (Neobjavljena doktorska disertacija). [Psychopathy, personality, and criminal recidive: A multimethod approach. (Unpublished doctoral dissertation)]. Faculty of Philosophy, University of Belgrade.
- Međedović, J. (2014b). Should the space of basic personality traits be extended to include the disposition toward psychotic-like experiences?. *Psihologija, 47*(2), 169–184. <https://doi.org/10.2298/PSI1402169M>
- Međedović, J., Čolović, P., Dinić, B. M., & Smederevac, S. (2019). The HEXACO Personality Inventory: Validation and psychometric properties in the Serbian language. *Journal of Personality Assessment, 101*(1), 25–31. <https://doi.org/10.1080/00223891.2017.1370426>
- Meins, E., Jones, S. R., Fernyhough, C., Hurndall, S., & Koronis, P. (2008). Attachment dimensions and schizotypy in a non-clinical sample. *Personality and Individual Differences, 44*(4), 1000–1011. <https://doi.org/10.1016/j.paid.2007.10.026>
- Nedeljković, B., & Tucaković, L. (2022). Understanding "evil": A closer look at the Dark Tetrad's relations with HEXACO and Big Five. *Zbornik Instituta za kriminološka i sociološka istraživanja, 41*(2–3), 67–88. <https://doi.org/10.47152/ziksi2022035>

- Nicholson, N., Soane, E., Fenton-O'Creevy, M., & Willman, P. (2005). Personality and domain-specific risk taking. *Journal of Risk Research*, *8*(2), 157–176. <https://doi.org/10.1080/1366987032000123856>
- Onraet, E., Van Hiel, A., Roets, A., & Cornelis, I. (2011). The closed mind: 'Experience' and 'cognition' aspects of openness to experience and need for closure as psychological bases for right-wing attitudes. *European Journal of Personality*, *25*(3), 184–197. <https://doi.org/10.1002/per.775>
- Ozer, D. J., & Benet-Martínez, V. (2006). Personality and the prediction of consequential outcomes. *Annual Review of Psychology*, *57*, 401–421. <https://doi.org/10.1146/annurev.psych.57.102904.190127>
- Pejić, M., Tenjović, L., & Knežević, G. (2014). Validacija upitnika ličnosti BFI-10–kratke forme Inventara Velikih Pet [Validation of the BFI-10 questionnaire-short version of the Big Five Inventory]. *Primenjena psihologija*, *7*(1), 45–92. <https://doi.org/10.19090/pp.2014.1.45-92>
- Rammstedt, B., & John, O. P. (2007). Measuring personality in one minute or less: A 10-item short version of the Big Five Inventory in English and German. *Journal of Research in Personality*, *41*(1), 203–212. <https://doi.org/10.1016/j.jrp.2006.02.001>
- Roberts, B. W., Walton, K. E., & Bogg, T. (2005). Conscientiousness and health across the life course. *Review of General Psychology*, *9*(2), 156–168. <https://doi.org/10.1037/1089-2680.9.2.156>
- Ross, S. R., Lutz, C. J., & Bailley, S. E. (2002). Positive and negative symptoms of schizotypy and the five-factor model: A domain and facet level analysis. *Journal of Personality Assessment*, *79*(1), 53–72. https://doi.org/10.1207/S15327752JPA7901_04
- Sadiković, S., Smederevac, S., Mitrović, D., & Milovanović, I. (2018). Behavioral genetics foundations of relations between personality traits and satisfaction with life. *Primenjena psihologija*, *11*(4), 487–502. <https://doi.org/10.19090/pp.2018.4.487-502>
- Sher, K. J., Bartholow, B. D., & Wood, M. D. (2000). Personality and substance use disorders: A prospective study. *Journal of Consulting and Clinical Psychology*, *68*(5), 818–829. <https://doi.org/10.1037/0022-006x.68.5.818>
- Stanković, S., Lazarević, L. B., & Knežević, G. (2022). The role of personality, conspiracy mentality, REBT irrational beliefs, and adult attachment in COVID-19 related health behaviors. *Studia Psychologica*, *64*(1), 26–44. <https://doi.org/10.31577/sp.2022.01.837>

- Steel, P., Schmidt, J., & Shultz, J. (2008). Refining the relationship between personality and subjective well-being. *Psychological Bulletin*, *134*(1), 138–161. <https://doi.org/10.1037/0033-2909.134.1.138>
- Swickert, R. J., Hittner, J. B., & Foster, A. (2010). Big Five traits interact to predict perceived social support. *Personality and Individual Differences*, *48*(6), 736–741. <https://doi.org/10.1016/j.paid.2010.01.018>
- Šaula-Marojević, B. M. (2012). *Empirijska provera odnosa šestodimenzionalnog modela ličnosti i kategorijalnog modela poremećaja ličnosti*. (Neobjavljena doktorska disertacija). [Empirical testing of the relation between six-dimensional model of personality and categorial model of personality disorders. (Unpublished doctoral dissertation)]. Faculty of Philosophy, University of Belgrade.
- Tiliopoulos, N., & Goodall, K. (2009). The neglected link between adult attachment and schizotypal personality traits. *Personality and Individual Differences*, *47*(4), 299–304. <https://doi.org/10.1016/j.paid.2009.03.017>
- Tov, W., Nai, Z. L., & Lee, H. W. (2016). Extraversion and agreeableness: Divergent routes to daily satisfaction with social relationships. *Journal of Personality*, *84*(1), 121–134. <https://doi.org/10.1111/jopy.12146>
- Tucaković, L., & Nedeljković, B. (2022). Personality and affective correlates of openness to experience from Big Five and HEXACO personality models: The dual nature of Big Five openness. *Journal of Personality Assessment*. Advance online publication. <https://doi.org/10.1080/00223891.2022.2117047>
- Turiano, N. A., Whiteman, S. D., Hampson, S. E., Roberts, B. W., & Mroczek, D. K. (2012). Personality and substance use in midlife: Conscientiousness as a moderator and the effects of trait change. *Journal of Research in Personality*, *46*(3), 295–305. <https://doi.org/10.1016/j.jrp.2012.02.009>
- van der Gaag, M., Hoffman, T., Remijsen, M., Hijman, R., de Haan, L., van Meijel, B., van Harten, P. N., Valmaggia, L., de Hert, M., Cuijpers, A., & Wiersma, D. (2006). The five-factor model of the Positive and Negative Syndrome Scale II: A ten-fold cross-validation of a revised model. *Schizophrenia Research*, *85*(1-3), 280–287. <https://doi.org/10.1016/j.schres.2006.03.021>
- Watson, D., Clark, L. A., & Chmielewski, M. (2008). Structures of personality and their relevance to psychopathology: II. Further articulation of a comprehensive unified trait structure. *Journal of Personality*, *76*(6), 1545–1586. <https://doi.org/10.1111/j.1467-6494.2008.00531.x>

Appendix A

Descriptives, reliabilities and, correlations between all Study 1 variables

	1	2	3	4	5	6	7	8	9	10	11
1. Sex (male)											
2. Age	.27**										
3. Extraversion	-.03	.07	(.33)								
4. Neuroticism	-.24**	-.22**	-.07	(.60)							
5. Agreeableness	.03	.05	.11	-.25**	(.37)						
6. Conscientiousness	-.02	.19**	.15*	-.17**	.17**	(.53)					
7. Openness	.08	-.06	.02	-.02	-.02	-.03	(.30)				
8. Disintegration	.03	-.08	-.17**	.32**	-.29**	-.27**	.01	(.90)			
9. Alcohol use	.27**	-.07	.08	.01	-.10	-.23**	.00	.23**	(.86)		
10. Drug use	.41**	.23**	.04	-.01	-.07	-.12*	-.05	.19**	.22**	(.90)	
11. Quality of life	.00	-.01	.30**	-.40**	.29**	.37**	.11*	-.35**	.13*	-.16**	(.85)
<i>M</i>		25.94	3.25	3.08	3.35	2.91	3.61	2.19	0.70	0.37	3.61
<i>SD</i>		8.22	0.91	1.08	0.95	0.91	1.00	0.77	0.62	0.66	0.68

Note. Sex is coded as Female = 0; Male = 1; *M* – mean; *SD* – standard deviation; Cronbach alpha coefficients are presented in parentheses on a diagonal; ** $p < .01$; * $p < .05$.

Appendix B

Descriptives, reliabilities, and correlations between all Study 2 variables

	1	2	3	4	5	6	7	8	9	10	11
1. Sex (male)											
2. Age	.12**										
3. Extraversion	.04	.16**	(.75)								
4. Emotionality	-.53**	-.14**	-.17**	(.77)							
5. Agreeableness	.00	.12**	.11**	-.01	(.71)						
6. Conscientiousness	.02	.14**	.11**	-.07	-.03	(.76)					
7. Openness	.05	.11**	.14**	-.01	.09*	.05	(.78)				
8. Honesty-humility	-.17**	.03	-.02	.11*	.24**	.14**	.08	(.74)			
9. Disintegration	-.18**	-.18**	-.30**	.26**	-.19**	-.29**	.02	-.25**	(.82)		
10. Avoidance	.01	-.03	-.31**	-.10*	-.20**	-.15**	-.19**	-.13**	.25**	(.82)	
11. Anxiety	-.16**	-.12**	-.29**	.29**	-.14**	-.22**	-.10*	-.22**	.53**	.30**	(.91)
<i>M</i>		28.58	3.29	3.15	2.89	3.55	3.68	3.57	2.34	2.26	2.29
<i>SD</i>		6.68	0.71	0.76	0.68	0.70	0.79	0.76	0.83	0.55	0.87

Note. Sex is coded as Female = 0; Male = 1; *M* – mean; *SD* – standard deviation; Cronbach alpha coefficients are presented in parentheses on a diagonal; ** $p < .01$; * $p < .05$.

