



Humor styles in Serbia: an evaluation of the Humor Styles Questionnaire and correlations with social attitudes

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Abstract

Humor styles refer to the everyday use of humor, varying across self-enhancing, affiliative, aggressive and self-defeating styles, entailing differences in focus on the self vs. other as well as between being adaptive vs. maladaptive. We validated the instrument devised to capture these differences, the Humor Styles Questionnaire (HSQ; Martin et al., *Journal of Research in Personality* 37:48–75, 2003), in a novel cultural context. Furthermore, we investigated the relations of humor styles with various aspects of social orientations and attitudes, to widen the understanding of the correlates. Our study showed that the suggested four-factor structure reproduces reasonably well in the Serbian context, with some notable exceptions. Humor styles were meaningfully related to basic social connectedness of the individual (loneliness and self-esteem) as well as the wider social orientations and attitudes (their value orientations, social dominance orientation, and ethnocentrism). The self-defeating humor style was reflective of a more negative view of oneself and subordination to the group while the aggressive humor style indicated endorsement of dominance within the in-group over other groups. We discuss the cross-cultural validity of the instrument and how the findings contribute to a wider positioning of the humor styles within the domain of social-psychological variables.

Keywords Humor styles · Western Balkans · Social attitudes · Ethnocentrism

Introduction

Recent theoretical developments in the study of humor have focused on individual differences in how the use of humor corresponds with other significant areas of psychological functioning (Martin et al., 2003). Martin and colleagues (Martin et al., 2003) proposed a two-dimensional model of humor styles that, in their opinion, captures most of the variability in everyday use of humor: focus on self, versus

others, and adaptive versus maladaptive (potentially detrimental) styles. Similar to a cognitive style which represents a typical manner in which an individual thinks, a humor style is a typical means of using humor.

The affiliative humor style is focused on others and entails enhancing one's relationship with others; people endorsing this style like to tell jokes, make other people laugh, and amuse others, consequently facilitating social relationships. The self-enhancing humor style is a benevolent style of using humor that is focused on the self. This style entails a humorous outlook on life in general, even when faced with difficult situations and adversity, enabling the individual to navigate hardships in a constructive manner. The aggressive humor style involves using humor at the expense of others, with the motive to enhance the self, and can be expressed through insensitive humor, ridicule, or sarcasm. Although sometimes difficult to discern from playfulness, the aggressive humor style is reserved for using humor intended to belittle others, and can therefore be detrimental to one's relationships with others. The self-defeating humor style entails enhancing relationship with others at the expense of the self, i.e., seeking to please others through being laughed at and

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making oneself the target of jokes. This style also entails engaging in humor to repress one's feelings and needs, in order to be accepted by others – therefore, it can become detrimental to one's wellbeing. The basic assumption underlying Martin et al.'s (2003) humor style model is that not all forms of humor are beneficial for an individual's mental health or their relations with others as both the aggressive and self-defeating humor styles are detrimental to these outcomes (see also Bilge & Saltuk, 2007; Chen & Martin, 2007; Erickson & Feldstein, 2007; Jovanovic, 2011; Martin et al., 2003; Sirigatti et al., 2014; for a critique, see Heintz & Ruch, 2018).

Martin and colleagues developed an instrument to measure the four proposed styles of humor, the Humor Styles Questionnaire (HSQ; Martin et al., 2003). The focus of the present study is to examine the psychometric properties and correlates of humor styles using a Serbian translation of the HSQ. Although the scale has been validated in different countries, some studies have also questioned some aspects of its validity, e.g. its construct validity (Heintz & Ruch, 2015) as well as the agreement between self- and other ratings (Heintz, 2017). Previous studies also reveal some deviations from the original factor structure and differing patterns of relations with other constructs, in particular in regions culturally more distant to the original Canadian context (e.g. Ruch & Heintz, 2016; Taher et al., 2008). The present study adds to the cross-cultural research by examining the factor structure of a Serbian translation of the HSQ.

Cross-cultural validation of humor styles

The HSQ originated in a Western cultural context in that scale development occurred in Canada. Cross-cultural research with the HSQ has occurred in other Western countries, for example, the USA (Erickson & Feldstein, 2007), Italy (Sirigatti et al., 2014), Spain (Torres-Marín et al., 2018), Belgium (Saroglou & Scariot, 2002), and Germany (Ruch & Heintz, 2016). The HSQ has been studied in some Eastern countries, for example, China (Chen & Martin, 2007) and Hong Kong (Yue et al., 2014), and among Muslim populations, for example, in Turkey (Bilge & Saltuk, 2007), Egypt (Kalliny et al., 2006), and Lebanon (Kazarian & Martin, 2004; Taher et al., 2008). Most of these cross-cultural studies validated the basic four-factor structure of the questionnaire as well as its internal consistency and reliability. However, in some studies, up to five original items showed deviations from the intended factorial structure (Ruch & Heintz, 2016); most of these items have come from the aggressive and self-defeating humor style scales. The aggressive humor style consistently showed lower internal consistency and deviations from the intended structure across different cultures (e.g. Bilge & Saltuk, 2007; Chen & Martin, 2007; Sirigatti et al., 2014) which suggest that

this style is the least consistent of the four styles across cultures and samples. Furthermore, the patterns of means, as well as relations among the styles, varied across cultures, especially within contexts most distant from the original samples in Canada. For instance, Chen and Martin (2007) found that Chinese samples had lower means on each of the humor styles compared to Canadians, which, in their opinion, reflected a different status of humor within the culture. Taher and colleagues (Taher et al., 2008) found unexpected patterns of correlations among different humor styles, for instance, the self-defeating humor style correlated positively with all the other styles, even the benevolent ones, which they interpreted in relation to an interdependent self-construal in a collectivist culture.

A recent large cross-cultural study compared humor styles across 28 countries (Schermer et al., 2019) and highlighted several similarities and differences. It was found that most cultures had highest scores on the affiliative humor style scale and show similar patterns of humor styles differences in relation to age and gender. However, means of humor styles differed across the countries, as well as the metric properties of some of the scales, suggesting that country-specific validations of the questionnaire are advisable.

Humor styles in the Western Balkans

Humor styles have been recently investigated in several studies in Serbia (Jovanovic, 2011; Jovančević et al., 2019; Vukobrat, 2013; for the aggressive humor style see also Međedović & Bulut, 2017) and other countries in the Western Balkans (e.g. Bosnia & Herzegovina, Kolenović-Đapo et al., 2017; Tadić & Pavičević, 2016). These studies focused exclusively on the correlations among humor styles, personality and some mental health indicators. For instance, Jovančević and colleagues (Jovančević et al., 2019) investigated personality traits and empathy as predictors of humor styles in a sample of adolescents. They found that personality traits predicted the humor styles better than empathy, with percentages of explained variance ranging from 12% (for the self-defeating humor style) to 37% (for the affiliative humor style). Similarly, Vukobrat (2013) found that personality traits explained from 9 to 24% of variance in humor styles in a student sample. Furthermore, life satisfaction was positively predicted by positive but not negative humor styles.

Jovanovic (2011) investigated whether humor styles mediate the relationship between personality dimensions and psychological well-being among university students and found that the self-enhancing humor style partly mediated the relation between extraversion and neuroticism, on the one side, and with life satisfaction, on the other. Similarly, the affiliative humor style mediated the relation between neuroticism and affective aspects of well-being.

As the review shows, all of the previous studies have focused on the mental-health and/or personality correlates of humor styles, while the relationships between humor styles and social orientations and attitudes has not been established in this context. In addition, none of the previous studies reported extensive psychometric assessments of the instrument beyond the internal consistencies. We therefore sought to conduct a more thorough psychometric evaluation of the Humor Styles Questionnaire (Martin et al., 2003), in particular to establish its factorial validity. We also aimed to widen the nomological network of the humor styles by investigating their relationship with a wider range of variables, beyond the personality and mental health indicators.

Humor styles, social orientations, and attitudes

Researchers have so far mostly examined the relationships between the four humor styles with basic personality traits as well as various outcomes related to mental health. For instance, a large number of studies show reliable relations between positive humor styles (affiliative, self-enhancing) and various mental health indicators, such as cognitive and affective psychological wellbeing, coping and defense mechanisms, self-esteem, and a lack of depressive or anxious symptomatology (e.g. Bilge & Saltuk, 2007; Chen & Martin, 2007; Erickson & Feldstein, 2007; Jovanovic, 2011; Martin et al., 2003; Sirigatti et al., 2014). Because humor styles appear to be quite relevant for the social functioning of the individual, further study of the relationships between humor styles and various social orientations and basic attitudes is warranted. It is the particular focus of the present study to add knowledge on these relationships in a cultural context more collectivist (Hofstede, 2001; Inglehart, 2007) than the original Canadian context and other Western contexts typically represented in the existing research. In the following, we review this research and elaborate on possible specificities.

One of the basic indicators of an individual's level of social functioning is self-esteem (Leary et al., 1995). Previous studies found that self-esteem is positively related to the self-enhancing and affiliative humor styles (Ford et al., 2016; Martin et al., 2003; Saroglou & Scariot, 2002). These relationships have also been validated cross-culturally, e.g. in Hong Kong (Yue et al., 2014) and Turkey (Ozyesil, 2012) although there are few studies from non-Western contexts. The studies yielded less consistent results regarding the relationship between self-esteem and maladaptive humor styles. While there was typically no relation to the aggressive humor styles, the relationship between the self-defeating humor style and self-esteem was mostly found to be negative (Ford et al., 2016; Martin et al., 2003; Ozyesil, 2012; Saroglou & Scariot, 2002). However, one study conducted in Hong Kong (Yue et al., 2014) did not find any significant

relation between self-esteem and the self-defeating style, which might suggest there is some cultural variance. In a more collectivist context such as Serbia, perhaps the self-defeating humor style would be more consistent with individual self-esteem, due to the interdependent self-construal, as suggested by some of the previous research in such contexts (Taher et al., 2008).

Another relevant variable is loneliness and its link with humor styles has been investigated mostly in Western countries. Hampes (2005) revealed in an American sample a positive relation of loneliness with self-defeating and a negative relation with self-enhancing and affiliative style, which is also in accordance with the theoretical assumptions. Another American study validated these findings (Fitts et al., 2009) and further showed how humor styles mediated the link between shyness and loneliness: through the fact that shy people use humor styles detrimental to self and fail to use a socially adaptive style of humor. A study conducted in Australia extended the previous findings revealing that both adaptive humor styles (affiliative and self-enhancing) were negatively related with loneliness, while the two maladaptive dimensions (aggressive and self-defeating) were positively related to loneliness (Schermer et al., 2017). Following, we wanted to investigate these correlations in the present cultural context of Serbia. We wanted to assess whether loneliness is associated with a lack of using adaptive humor styles as well as the presence of the maladaptive styles, self-defeating in particular. Since modesty is an important value in collectivist contexts (Heine et al., 1999), self-defeating humor might be less positively related with loneliness compared with individualistic cultures. Similarly, self-enhancing humor styles would be less negatively related with loneliness in collectivistic cultures than individualistic cultures.

Studies relating humor styles to basic social orientations and attitudes are much fewer. We found only one study to include measures of individual value orientations, namely, Kazarian and Martin (2004) investigated the relation between humor styles and the value orientation of individualism/collectivism. The affiliative humor style was related to horizontal collectivism whereas the self-defeating humor style correlated with vertical collectivism. The aggressive humor style was related to vertical individualism. In addition, the self-enhancing humor style was not related to value orientations, so that the authors concluded that this style did not distinguish individualists and collectivists. However, perhaps this was due to a limited variability in the value orientations in their sample. Since the local cultural context of the Western Balkans should be less homogenous in terms of individualistic and collectivist orientation (Hofstede, 2001; Inglehart, 2007), perhaps we will be able to detect a relation between the self-enhancing humor style and individualist orientations, most probably horizontal individualism.

Another interesting issue is whether humor styles are related to endorsing prejudice or unequal treatment of outgroups in the society. In the only study that previously investigated this, Hodson et al. (2010) revealed that the aggressive humor style is positively related to both social dominance orientation (SDO), that is, a tendency to endorse hierarchical relations between groups in a society, and prejudice towards Blacks. In the present study, we wanted to gain further insight into relations between humor styles and prejudicial attitudes, therefore we included measures of SDO and of ethnocentrism, which is a predominant social attitude in the local context, still characterized by post-conflict ethnic divides (Branković et al., 2017; Turjačanin et al., 2017). We expect that the aggressive humor style will have a positive correlation with ethnocentrism.

The present study

The present study had two goals. The first was to conduct a basic evaluation of the Humor Styles Questionnaire (HSQ) in Serbia, a part of a culturally specific area of the Western Balkans that is to validate the four-dimensional factor structure of the scale, establish subscale reliabilities and inter-correlations.

The second goal was to investigate the relations between humor styles and different social-psychological variables, reflecting both relations with the proximal social surroundings (self-esteem, loneliness) as well as the wider social and political context (individualism-collectivism, social dominance orientation, and ethnocentrism). As outlined in the review, since these relations are not as well investigated as other correlates of humor styles, we sought to widen the specter of the correlates studied and at the same time provide a cross-cultural test of their generality.

Method

Participants and procedure

A total of 404 participants took part in a larger cross-cultural study (74.8% female). Participants were mostly young adults, with an average age of 21.73 years, $SD = 4.85$, and ranging from 18 to 52. In terms of the self-declared religiosity, 71.5% of participants declared themselves as Christian, 27% as atheist, while the remaining participants (1.4%) affiliated with other religions (Islam, Buddhism, and Judaism).

Participants were recruited among university students, in exchange for course credit. Participation was anonymous and voluntary, and no sensitive information was collected. Research Ethics Board approval was obtained from two host universities before collecting data for the overall study. Prior

to participation, the participants were informed about the details of the procedure and completed an informed consent document. The questionnaire was administered online, and the procedure took approximately 15–30 min.

Instruments

Humor styles questionnaire (HSQ; Martin et al., 2003) consists of 32 items measuring individual differences in four humor styles: affiliative (sample item, “I enjoy making people laugh”), self-enhancing (sample item, “Even when I’m by myself, I’m often amused by the absurdities of life”), aggressive (sample item, “If someone makes a mistake, I will often tease them about it”), and self-defeating (sample item, “Letting others laugh at me is my way of keeping my friends and family in good spirits”). Participants respond to items using seven-point Likert-type rating scales, anchored at 1 (*definitely disagree*) to 7 (*definitely agree*). As each scale consists of eight items, scale totals can range from a low of 8 to a maximum value of 56.

The questionnaire was translated to Serbian by the first investigator, who is a trained translator, and then back-translated in comparison with the translation to Bosnian. When translating, a functional, rather than literal, equivalent was sought. All of the items closely resemble the original items of the scale and no major changes were introduced in terms of the content. The translated instrument is available at <https://osf.io/3ps6y/>.

Self-esteem was measured by a single item (*I have high self-esteem.*) rated on a seven-point scale, from 1 (*not very true of me*) to 7 (*very true of me*). The validity of the measure has been established in previous research (Robins et al., 2001).

Loneliness was measured by the Three-Item Loneliness Scale (TILS; Hughes et al., 2004). Participants rated how often they felt that they lacked companionship, left out, or felt isolated from others on a three point scale (1 = *hardly ever*; 2 = *some of the time*; 3 = *often*). The internal consistency was acceptable ($\alpha = 0.61$).

Individualism-collectivism was measured by Individualism and Collectivism Scale (INDCOL; Singelis et al., 1995). The scale consists of 12 items, each rated on a 9-point scale from 1 (*never or definitely no*) to 9 (*always or definitely yes*). The items were designed to tap horizontal individualism (e.g. *I enjoy being unique and different from others in many ways.* $\alpha = 0.87^1$), vertical individualism (e.g. *It is important that I do my job better than others.*, $\alpha = 0.63$), horizontal collectivism (e.g. *It is important to maintain harmony within my group.* $\alpha = 0.78$) and vertical collectivism (e.g. *I would do what would please my family, even if I detested that activity.*, $\alpha = 0.53$).

¹ One of items that had a low correlation with the rest of the scale was removed, specifically, “*I prefer to be direct and forthright when discussing with people.*”.

Social dominance orientation (SDO) was measured with the translated and adapted 8-item scale (Ho et al., 2015), e.g. *An ideal society requires some groups to be on top and others to be on the bottom or Group equality should not be our primary goal* ($\alpha=0.76$), rated on a 5-point scale from 1 (*completely disagree*) to 5 (*completely agree*). Since principal component analysis revealed that the first component explained 38.24% of the variance and had high loadings from all of the items of the scale (lowest being 0.49), a single average score was computed.

Ethnocentrism was assessed with a 5-item scale, translated and adapted from Bizumić and colleagues (Bizumic et al., 2009). We opted for the specific aspect of in-group superiority, that is, the perception of the ethnic in-group as superior to other groups, e.g. *If people would understand the true value of my ethnic group, most would want to live the same way as we do* ($\alpha=0.80$). The responses were given on a 5-point scale, as for the previous measure.

Statistical analyses

To assess the latent dimensions of the scale, we conducted confirmatory factor analyses and exploratory structural equation modeling. Second, we report the descriptive statistics on the manifest scores, i.e., means, reliability estimates, inter-item correlations, and Pearson's correlations between the scales. Finally, path analysis was used to establish the relations of the humor styles and the social orientation and attitude measures.

Results

Factor structure of the HSQ

We conducted confirmatory factor analysis to test whether the four-factor solution shows good fit to the data using MPlus version 8 (Muthén & Muthén, 2017). Confirmatory analysis revealed mixed results in terms of fit indices for the four-factor solution: $\chi^2(458) = 1060.539$, $p < 0.01$, CFI = 0.772, RMSEA = 0.057, 90% CI [0.053, 0.062], SRMR = 0.077. In particular, CFI was below the acceptable threshold for good model fit. Given the fact that the CFI tends to be biased in models with a high number of variables (Kenny & McCoach, 2003), it has been suggested to rely on the estimates of RMSEA to evaluate model fit, which in the case of the present model was acceptable (i.e. below 0.08; Byrne, 1994).

Next, we parceled the items into four parcels per factor using the item-to-construct balance approach (Little et al., 2002; Torres-Marín et al., 2018). This significantly improved model fit: $\chi^2(98) = 271.77$, $p < 0.01$, CFI = 0.884, RMSEA = 0.066, 90% CI [0.057, 0.076]. However, the CFI was still below the acceptable threshold.

To inspect the factor structure in a more exploratory fashion, we conducted exploratory structural equation modeling (ESEM), which allows cross-loadings among factors to emerge while also applying target rotation which specifies which items should have loadings close to 0. ESEM also yielded mixed support for the model, $\chi^2(374) = 725.356$, $p < 0.01$, CFI = 0.867, RMSEA = 0.048, 90% CI [0.043, 0.053], SRMR = 0.042. The pattern of loadings (detailed in Table 1) shows that most of the items from the respective scales do have high loadings on the intended subscales. However, there are a few notable exceptions, that is, several items with low loadings on their intended factor, specifically, items 6, 11, 22 and 28, as well as items with significant cross-loadings on more than one factor. In case of items 6, 22 and 28, the second loadings are higher than the loadings on the intended factor.

The structure of the affiliative humor scale appears to reproduce quite well, with all of the intended items having high loadings, albeit several items from the other scales also have some cross-loadings on this scale. With respect to the self-enhancing scale, item 6 (*“Even when I'm by myself, I'm often amused by the absurdities of life.”*), has a rather low loading on this factor, while having a higher second loading on the self-defeating factor. This suggests that a humorous outlook of this sort may be perceived as more self-defeating than self-enhancing in the local setting.

The negatively keyed item, item 22, *“If I am feeling sad or upset, I usually lose my sense of humor”*, similarly has a somewhat higher loading on the affiliative factor, suggesting that losing one's sense of humor is perceived as having an interpersonal component equally important as the intrapersonal one.

Two items of the aggressive scale had low loadings: item 11 (*“When telling jokes or saying funny things, I am usually not very concerned about how other people are taking it”*) and item 19 (*“Sometimes I think of something that is so funny that I can't stop myself from saying it, even if it is not appropriate for the situation”*). These items might appear overly harsh for participants from a more collectivist setting. Finally, item 28 (*“If I am having problems or feeling unhappy, I often cover it up by joking around, so that even my closest friends don't know how I really feel.”*) was originally intended to measure self-defeating style, however, in the present analyses it loads more highly onto the self-enhancing factor. Apparently, in a more collectivist setting, hiding one's problems under the guise of a humorous outlook can be perceived as self-enhancing rather than destructive for the individual, in line with previous studies in other collectivist settings (e.g. in Lebanon, Kazarian & Martin, 2004; Taher et al., 2008). This finding is relatable to the previous finding that being “amused by absurdities of life”, intended as an indicator of the self-enhancing style, is more reflective of a self-defeating profile.

Table 1 Factor loadings from exploratory structural equation modeling

Component		1	2	3	4
Affiliative					
hsq1	I usually don't laugh or joke around much with other people	0.62	0.02	-0.07	0.01
hsq5	I don't have to work very hard at making other people laugh—I seem to be a naturally humorous person	-0.48	0.12	-0.14	0.04
hsq9	I rarely make other people laugh by telling funny stories about myself. (R)	0.41	0.11	-0.02	-0.14
hsq13	I laugh and joke a lot with my closest friends	-0.56	0.10	0.09	-0.07
hsq17	I usually don't like to tell jokes or amuse people. (R)	0.50	-0.09	0.08	
hsq21	I enjoy making people laugh	-0.46	0.14	-0.03	0.23
hsq25	I don't often joke around with my friends. (R)	0.57	-0.05	-0.06	
hsq29	I usually can't think of witty things to say when I'm with other people. (R)	0.53	0.00	0.08	0.22
Self-enhancing					
hsq2	If I am feeling depressed, I can usually cheer myself up with humor	-0.22	0.59	0.05	-0.04
hsq6	Even when I'm by myself, I'm often amused by the absurdities of life	0.00	0.17	-0.06	0.24
hsq10	If I am feeling upset or unhappy I usually try to think of something funny about the situation to make myself feel better	-0.00	0.68	0.06	0.04
hsq14	My humorous outlook on life keeps me from getting overly upset or depressed about things	-0.08	0.59	-0.11	0.14
hsq18	If I'm by myself and I'm feeling unhappy, I make an effort to think of something funny to cheer myself up	0.05	0.80	-0.01	-0.11
hsq22	If I am feeling sad or upset, I usually lose my sense of humor. (R)	0.22	-0.21	0.06	0.11
hsq26	It is my experience that thinking about some amusing aspect of a situation is often a very effective way of coping with problems	-0.08	0.61	0.04	0.03
hsq30	I don't need to be with other people to feel amused – I can usually find things to laugh about even when I'm by myself	0.09	0.29	0.06	0.07
Aggressive					
hsq3	If someone makes a mistake, I will often tease them about it	0.04	0.03	-0.49	0.07
hsq7	People are never offended or hurt by my sense of humor. (R)	-0.13	0.04	0.30	0.01
hsq11	When telling jokes or saying funny things, I am usually not very concerned about how other people are taking it	0.01	0.17	-0.20	0.02
hsq15	I do not like it when people use humor as a way of criticizing or putting someone down. (R)	0.06	0.10	0.53	0.03
hsq19	Sometimes I think of something that is so funny that I can't stop myself from saying it, even if it is not appropriate for the situation	-0.06	0.22	-0.29	0.17
hsq23	I never participate in laughing at others even if all my friends are doing it. (R)	0.14	0.06	0.53	-0.01
hsq27	If I don't like someone, I often use humor or teasing to put them down	0.06	-0.12	-0.41	0.11
hsq31	Even if something is really funny to me, I will not laugh or joke about it if someone will be offended. (R)	-0.03	-0.02	0.69	0.15
Self-defeating					
hsq4	I let people laugh at me or make fun at my expense more than I should	0.05	0.03	0.09	0.63
hsq8	I will often get carried away in putting myself down if it makes my family or friends laugh	-0.25	-0.03	0.09	0.65
hsq12	I often try to make people like or accept me more by saying something funny about my own weaknesses, blunders, or faults	-0.01	-0.06	-0.11	0.62
hsq16	I don't often say funny things to put myself down. (R)	0.13	0.18	0.09	-0.53
hsq20	I often go overboard in putting myself down when I am making jokes or trying to be funny	0.13	0.07	-0.13	0.63
hsq24	When I am with friends or family, I often seem to be the one that other people make fun of or joke about	0.14	0.11	0.11	0.56
hsq28	If I am having problems or feeling unhappy, I often cover it up by joking around, so that even my closest friends don't know how I really feel	0.08	0.35	-0.09	0.24
hsq32	Letting others laugh at me is my way of keeping my friends and family in good spirits	-0.08	-0.00	0.00	0.58

*loadings on the intended factor are bolded for each of the scales, as well as items showing significant deviations from the intended factor structure. Original item content is from Martin et al. (2003)

Humor styles scale descriptive statistics and inter-correlations

Descriptive statistics for manifest variables are presented in Table 2. The highest mean was registered for the affiliative humor style, followed by the self-enhancing, self-defeating and aggressive styles, all differences among the styles being

significant, $F(2.81, 1134.58^2) = 766.66, p < 0.01$. When we compare the current means with the norms obtained in Canada by the original authors (Martin et al., 2003) we observe that the self-defeating humor style has a somewhat

² Greenhouse–Geisser correction has been applied since the assumption of sphericity was not met.

Table 2 Humor style descriptive statistics and gender differences

Humor style	Total sample		Males		Females		F
	M	SD	M	SD	M	SD	
Affiliative	46.07	6.59	46.08	7.29	46.05	6.35	0.01
Self-enhancing	36.85	8.87	38.12	9.00	36.43	8.79	2.79
Aggressive	24.57	7.42	28.24	7.87	23.33	6.84	36.30**
Self-defeating	27.60	9.17	29.19	10.14	27.06	8.77	4.13*

** $p < 0.01$, * $p < 0.05$

higher mean in the local context, and that the aggressive humor style had the lowest mean of the humor styles. Given that the context is more collectivist compared to Canada, depreciating the self to appear humorous, that is, endorsing a self-defeating humor style should be more socially acceptable. Moreover, given the recent studies that revealed that self-defeating humor could in fact be related to more self-esteem and more positive emotions (Heintz & Ruch, 2018), it is possible that this specific expression of humor is especially encouraged in collectivist settings, as it seemingly is not self-defeating.

Also in accordance with previous research (e.g. Sirigatti et al., 2014), gender differences were observed on the negative humor styles: males reported using the aggressive humor style to a larger extent than females, $F(1,402) = 36.30$, $p < 0.01$, $\eta^2 = 0.08$, and the same holds true for the self-defeating style, although the difference is smaller here, $F(1,402) = 4.13$, $p = 0.043$, $\eta^2 = 0.01$.

In Table 3 we present internal consistencies and inter-correlations of the humor styles scales. The translated scales are internally consistent and the coefficients for all of the scales, but the aggressive, are almost the same values as in the original study (where they ranged between 0.80 and 0.81), however, the aggressive scale is somewhat less consistent (the alpha coefficient in the original study was 0.77). This appears to be a common finding from international validations of the aggressive humor style scale, with alpha coefficients even lower than observed here (even lower than 0.6, e.g. Chen & Martin, 2007; Sirigatti et al., 2014; Taher et al., 2008). In a wide cross-cultural study of humor styles in 28 countries, aggressive humor had the lowest coefficient alpha values with a mean of only 0.59 (95% CI: 0.55 to 0.64), while 10 of the 28 countries had alpha values less than 0.60 (Schermer et al., 2019).

The pattern of inter-correlations of the humor styles is interesting in several respects. First, all of the styles are significantly interrelated, with the exception of the link between the aggressive and self-enhancing styles. As expected, the positive styles (affiliative and self-enhancing) are correlated among themselves, as well as the negative (aggressive and self-defeating) styles, although the latter correlation is lower. An interesting finding concerns the self-defeating style which was related to both the affiliative and the

self-enhancing style, unlike in the Western context. This appears to be a pattern reflective of more collectivist contexts, in which the self-defeating style is apparently more socially acceptable and in fact not as depreciative of self (Taher et al., 2008).

Relationships between humor styles and social orientations and attitudes

We examined the relations of humor styles with several outcome variables related to social functioning specifically, self-esteem, loneliness, as well as the personal value orientations of individualism-collectivism, social dominance orientation, and ethnocentrism. Descriptive statistics for these measures are provided in Table 4. We tested the predictive power of the four humor styles with respect to the named outcomes via path analyses, conducted in MPlus version 8 (Muthén & Muthén, 2017). The analyses were conducted on observed variables and in an exploratory fashion, without set constraints. We used the original subscales to allow comparability with prior research. Humor styles were entered as predictors, and self-esteem, loneliness, horizontal and vertical individualism/collectivism, social dominance orientation, and ethnocentrism were entered as criterion variables (presented in Fig. 1).

Humor styles explained a total of 12.3% of variance in self-esteem. As can be observed in Fig. 1, self-esteem was positively predicted by the self-enhancing and the affiliative humor styles, whereas it was negatively predicted by the self-defeating humor style. The correlation with the self-defeating humor style ($r = -0.15$) is somewhat less strong

Table 3 Humor style scales internal consistencies and inter-correlations

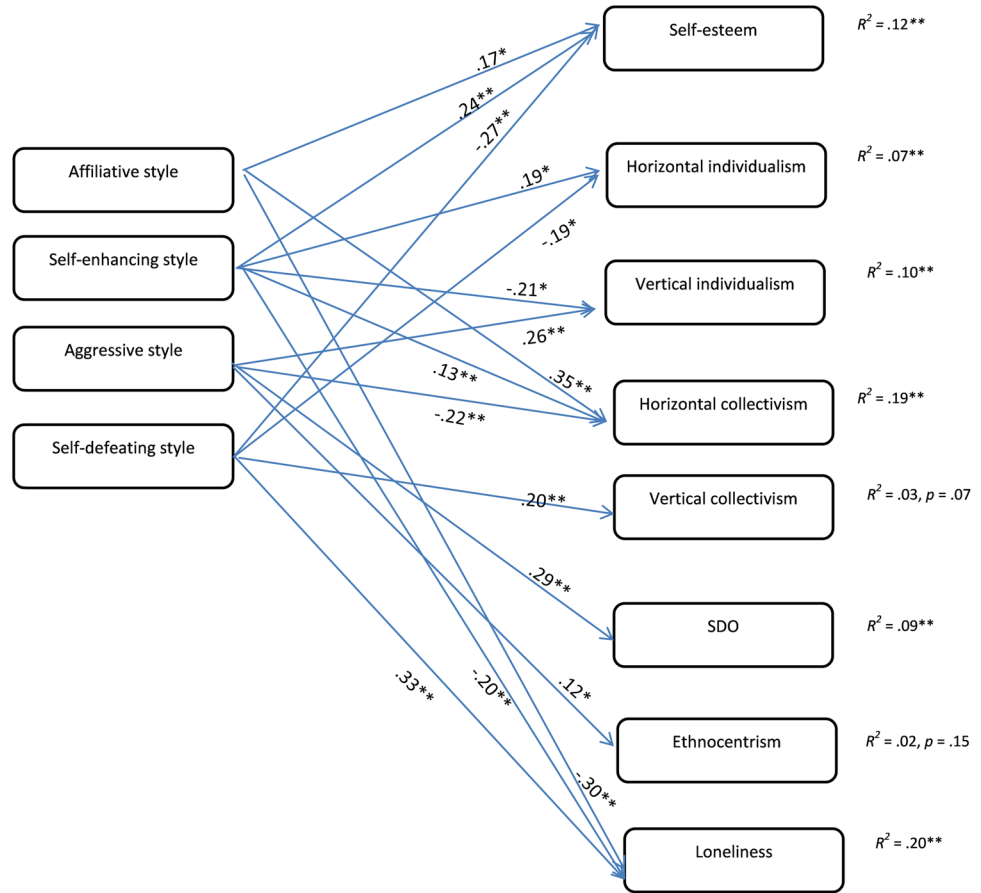
Humor style	1	2	3	4
Affiliative	0.75	0.41**	0.14**	0.25**
Self-enhancing		0.76	0.08	0.34**
Aggressive			0.64	0.22**
Self-defeating				0.79

* α coefficients are presented on diagonal. ** $p < 0.01$, * $p < 0.05$, two-tailed

Table 4 Descriptive statistics and inter-correlations of the criterion variables

Variable	M	SD	2	3	4	5	6	7	8
Self-esteem	4.97	1.55	-0.32**	0.32**	0.02	0.11*	-0.01	0.10*	0.08
Loneliness	1.84	0.50		-0.05	0.14**	-0.15**	0.02	0.01	-0.04
Horizontal individualism	6.82	1.98			0.20**	0.19**	0.01	0.11*	0.10*
Vertical individualism	3.26	1.73				-0.01	0.16**	0.34**	0.20**
Horizontal collectivism	7.53	1.44					0.20**	-0.22**	-0.05
Vertical collectivism	4.80	1.72						0.10*	0.15**
Social dominance orientation	2.23	0.75							0.32**
Ethnocentrism	1.97	0.85							

Fig. 1 Relations between humor styles and the social orientations and attitudes



than the one observed in previous studies from Western countries ($r = -0.38$; Ford et al., 2016; the same coefficient was reported by Saroglou & Scariot, 2002), ($z = 2.83$, $p < 0.01$, following Lenhard & Lenhard, 2014). However, due to variations in sample size and structure compared with the previous studies, these differences should be further tested within a single cross-cultural study.

The identical pattern of interrelations is found for the loneliness measure, albeit with opposite direction: loneliness was positively predicted by the use of the self-defeating humor style while at the same time being negatively predicted by the use of the self-enhancing and the affiliative humor styles. The

humor styles explained 19.9% of variance in loneliness. As individuals can report feeling lonely even when in a crowd, the special feature of the affiliative humor is that it makes an individual feel connected with others, rather than merely being among others. We can hypothesise that the focus is on using humor to increase cohesiveness amongst those around the individual. Thus, an individual more frequently involved in this specific type of interaction could feel less lonely. However, it should be noted that affiliative and self-enhancing style correlated somewhat less strongly with loneliness in this study ($r_{aff} = -0.29$, $r_{sh} = -0.21$) compared with the previous studies from the Western context. For instance, Hamps

(2005) reported the following correlations, for affiliative style, $r = -0.47$ ($z = 1.91$, $p = 0.028$), and for self-enhancing style $r = -0.39$ ($z = 1.80$, $p = 0.036$). Also, as noted before, to reach valid conclusion, the cross-cultural differences should be tested within a single study.

Further, regarding value orientations, humor styles explained the most variance in case of horizontal collectivism (19.3%), and vertical individualism (10.1%), while they explained 7.4% of variance in horizontal individualism and 3.5% of variance in vertical collectivism. The self-enhancing humor style positively predicted horizontal individualism while being negatively related to vertical individualism. In contrast, vertical collectivism was related to the self-defeating humor style. Vertical individualism was positively predicted by the aggressive humor style. Horizontal collectivism was positively related to both the self-enhancing and the affiliative humor styles, while it was negatively predicted by the aggressive humor style. Further, humor styles explained 9.5% of variance in SDO and 2.2% of variance in ethnocentrism. The aggressive humor style was positively related to endorsing relations of social dominance between groups, as well as perceiving the ethnic ingroup as superior.

In summary, this analysis showed that the affiliative and self-enhancing humor styles were related to a positive view of oneself as well as good interpersonal relations. Interestingly, those adopting a self-enhancement humor style appear to stick with the interests of the group, as indicated by the negative relationship with vertical individualism (a competitive orientation). The self-defeating humor style was reflective of a more negative view of oneself and subordination to the group (as evidenced by its relation with vertical collectivism). Lastly, the aggressive humor style indicated a competitive outlook for both the self and the in-group – vertical individualism, as well as endorsing the dominance of the in-group over other groups.

Discussion

In this study, we examined the Humor Styles Questionnaire in a novel setting, the Western Balkans, which culturally lies in-between individualist and collectivist societies (Hofstede, 2001; Inglehart, 2007). Beyond this basic factorial validity, we investigated how the four humor styles were related with different measures tapping into an individual's social connectedness, both with the proximal social environment (self-esteem, loneliness) as well as wider social orientations and attitudes (individualism-collectivism, social dominance orientation, and ethnocentrism).

This study adds to the support for the cross-cultural validity of the instrument (Bilge & Saltuk, 2007; Kazarian & Martin, 2004; Ruch & Heintz, 2016; Sirigatti et al., 2014;

Taher et al., 2008). Confirmatory factor analysis partially supported the four proposed subscales, that is, the affiliative, self-enhancing, aggressive and self-defeating humor styles, in the local setting, and we will shortly discuss the items that do not fit. The pattern of means is compatible with values established by previous research, except a somewhat higher prevalence of the self-defeating style. The pattern of relations between different styles is less in accordance with previous research in Western countries, and more similar to the results obtained in more collectivist settings, in particular as the self-defeating humor style was significantly related to both affiliative and self-enhancing styles (Taher et al., 2008). Taken together, these findings support the suitability of HSQ for use in the local context.

However, there are several items that were not consistent with the intended factor structure, either because they did not load highly onto their intended scale or had higher second loadings, specifically, items 6, 11, 19, 22 and 28. These findings suggest that the aggressive and self-defeating humor styles do show some specificity and could possibly benefit from further refinement.

In the present study, the aggressive humor style scale was the least reliable of the humor styles (α of 0.64). Exploratory structural equation modeling revealed two items with low loadings, specifically item 11 and item 19. We suggested that these items might be perceived as overly outright expressions of negativity and too negative for a collectivist setting. However, other interpretations are also possible. For instance, neither of the items mentions explicitly that the humor is necessarily disparaging to others. Also, some studies from non-collectivist settings, e.g. Germany, also observed the identical pattern of results (Ruch & Heintz, 2016). There is an alternative interpretation of the obtained results, in line with a recent proposition that specific humor content varies across the scales of the HSQ (Ruch & Heintz, 2017). By experimentally manipulating the contents of the HSQ items to reflect humor or other contextual factors, Ruch and Heintz (2017) found that in particular the aggressive humor style, as well as the self-enhancing and self-defeating humor style scales could reflect the non-humor contents. Specifically, they revealed that items 11 and 19 had lower correlations with the humor-specific HSQ.

Based on the current data, it is not possible to resolve this issue, since the contents of the items is not comparable to the current study. For instance, in the Ruch and Heintz (2017) study, the authors state that they changed the self-enhancing item from, “Even when I’m by myself, I’m often amused by the absurdities of life” to simply “I’m often amused by the absurdities of life”. By removing the beginning of the statement, the authors have removed the key aspect of the item, that the individual can cheer themselves when alone as opposed to needing others. This “alone” distinction is one of the characteristics which distinguishes between

self-enhancing and affiliative humor styles. Martin et al. (2003), distinguish between affiliative and self-enhancing humor styles by stating that the self-enhancing humor style “has a more intrapsychic than interpersonal focus” (p. 54). This distinction suggests that the context is important. For example, if the item had been rewritten to state, “When with friends, I’m often amused by the absurdities of life”, this item suggests a social aspect to the humor style and would not be tapping into the self-enhancing humor style. Similarly, examining other items in the Ruch and Heintz (2017)’s article’s Appendix, by stripping the context of the items, the authors are removing the nuances which distinguish the four styles in the current questionnaire. As outlined by Martin et al. (2003), the context of the item is important to understand the type of humor being assessed. Martin et al. (2003), in describing the importance of context, stated that items in previously published humor scales, such as, “*I can often crack people up with the things I say ... are assumed to assess adaptive types of humor, [but] might also be endorsed by individuals who frequently engage in potentially deleterious forms of humor such as sarcasm, disparagement humor, or humor used as a form of defensive denial*” (p. 51).

Further study involving a systematic manipulation of the contents of the items within the same study would be needed to establish which changes or variations in the item contents entail different correlates of the measures obtained. Based on the current findings, we can speculate that variations in the cultural context would also affect the exact understanding of the items, and we therefore think it would be worthwhile examining this issue further and cross-culturally.

The current study also suggests the means of the self-defeating humor scale for the present sample are higher than the values typically reported in Western contexts. The self-defeating humor style scale correlated with both self-enhancing and affiliative humor styles and some of its items also load on the self-enhancing factor (and vice-versa). We can conclude that the self-enhancing and self-defeating humor style are perhaps less distinct in the local cultural setting as they appear to share some common features, particularly the aspect of self-defeating style that is related to being open to laugh at oneself. This self-deprecating capacity could be highly valued in collectivist settings and may be less detrimental to the individual, similar to findings obtained in other more collectivist societies, e.g. in Lebanon (Kazarian & Martin, 2004; Taher et al., 2008). However, although a self-defeating humor style may be valued socially, an excessive tendency to engage in self-disparagement may result in less beneficial consequences for the individual. This is in line with the observation that the self-defeating humor style was related to lower self-esteem and higher self-report loneliness scores.

The issue has been raised by recent research as to whether this relationship of self-defeating humor with negative

outcomes is due to the fact that it is the form of humor more frequently used by individuals with lower self-esteem, while in itself being a constructive coping mechanism (Heintz & Ruch, 2018). Previous studies reveal both more and less beneficial outcomes or correlates of the self-defeating style. On the one hand, in addition to the first validation studies, further studies revealed significant positive genetic correlations between self-defeating humor and depressed affect (Kfrerer et al., 2019), and between self-defeating humor and the facets of borderline personality disorder (Schermer et al., 2015). On the other hand, several studies found that the use of self-defeating humor might be related to beneficial outcomes or at least unrelated to the less beneficial ones. For instance, it was shown that engaging in self-defeating humor did not induce more state anxiety in a task including experimental manipulation (Ford et al., 2017). Also, in a study among nursing professionals, self-defeating humor style had a small positive correlation with measures of happiness, hope, health and life satisfaction (Navarro-Carrillo et al., 2020).

Baisley and Grunberg (2019) assessed a humor-training online platform based on the four humor styles. Importantly, they emphasized that the relationship of any style of humor with well-being is not straightforward. As shown in their programme, different humor styles can be conceptualized as coping and communication tools that can be used in different ways and with different outcomes. Thus, gaining insight into one’s psychological needs highlighted by self-defeating humor could be beneficial if one learns to tackle them constructively. There appears to be an ambiguity contained in the definition of this style: whereas laughing at oneself could be beneficial when used in moderation, going to the extremes could be the point when the more negative emotions play in. Also, perhaps self-defeating humor could benefit persons with higher self-esteem while being less beneficial for persons with low self-esteem, who also tend to use it more frequently.

Our findings suggest that the cultural context could further complicate this relationship. For instance, more collectivist contexts support expression of self-defeating humor so that it can become beneficial for one’s social relations, but only up to a certain level at which it actually becomes less beneficial for the self-esteem. The issue of whether there are culturally-specific beneficial and destructive forms of self-defeating style merits further cross-cultural study.

The present study also contributes to the research on individual differences in humor styles by adding further insight into the social-psychological and implied political aspects of humor styles, in addition to the more frequently studied mental health and psychological well-being correlates. Our findings support the role of the various humor styles in the relation of the individual with both the more proximal and the wider social and political context. Regarding the former, loneliness was predicted by humor styles, supporting

the notion that uses of humor can have important consequences for the basic social connectedness of individuals (Fitts et al., 2009; Hampes, 2005). Specifically, loneliness was predicted by both the use of the maladaptive humor style of self-defeating humor, and by lower scores on the adaptive humor styles (self-enhancing and affiliative), in line with some of the previous findings (Hampes, 2005). However, the relationship with the adaptive humor styles was somewhat less strong than in previous studies in the Western context (e.g. Hampes, 2005), so this issue merits further research.

Furthermore, the humor styles were also found to relate to more general social orientations. The pattern of relations of humor styles with individual value orientations is consistent with the only previous study that investigated this topic (Kazarian & Martin, 2004). In the present study, we generally observed higher correlations between humor styles and measures of individualism – collectivism than the previous study, perhaps due to a higher variance in these orientations in the local context. In addition, we observed relations not revealed in the previous study, most importantly between horizontal individualism and the self-enhancing humor style (positive) as well as the self-defeating humor style (negative). Further, the aggressive humor style appears to be the most somber of all the styles in terms of its social-psychological correlates: social dominance orientation, vertical individualism and ethnocentrism, that is, the tendency to perceive the own ethnic group as superior to others. These findings are consistent with the previously established relation of the aggressive humor style and social dominance orientation, as well as anti-Black prejudice (Hodson et al., 2010). This study reveals that aggressive humor style is related to both more universal and context-specific prejudicial attitudes. The aggressive humor style can thus be a manifestation of prejudicial attitudes, but also a mechanism leading to further reinforcement of these attitudes (Ford et al., 2008).

Based on the current findings, we can speculate about two more general effects of the specific cultural context, that should be investigated in future studies, preferably cross-cultural. First, it appears that more variation in individual value orientations (Hofstede, 2001; Inglehart, 2007) could help establish previously unrecognized relationships of the humor styles with social and value-related constructs. This implies it would be important to widen the research beyond the well-studied and mostly Western context, to be able to capture a more comprehensive picture of their nomological network. Second, the lower correlations with loneliness and a less prominent “destructive” outlook of the self-defeating humor style clearly suggest that the more collectivist or interdependent settings could be particularly appreciative of this style. Given the previous discussion of its relations with mental health outcomes (Heintz & Ruch, 2018), further study in cross-cultural contexts seems warranted. In sum, given the ambiguity related

to the theoretical rationale of the humor styles, highlighted by previous research (Heintz, 2017) future research should best aim at both theoretical refinement and cross-cultural validation.

The present study has important limitations. First, being a cross-sectional study, it does not allow drawing any causal conclusions as to the nature of the relations between the humor styles and the criterion variables. The direction of these relations could also go the other way, that is, the basic social and value orientation could also shape the manner in which individuals use humor. Our intention has been to establish these relations in order to ascertain whether the humor style measures have meaningful relations with other measures, however, a more detailed understanding of the structural position of humor styles in the context of other psychological constructs remains for future studies. Second, our sample is specific as it encompassed university students. Following, a more representative sample could yield differing findings. However, because most of the previous validation studies also relied on student samples, this allowed comparability of results.

In conclusion, our study showed both cultural- and individual-level variation in humor styles that can be meaningfully related to the cultural context as well as the individual differences in basic social orientations and attitudes. We have established how humor styles vary within the same cultural context depending on the individual endorsement of individualistic and collectivist worldviews, as well as horizontal and hierarchical relations between individuals and groups. In general, the present results have contributed to investigations of humor styles, their meaning and outcomes.

Author contribution All authors contributed to the study conception and design. Material preparation, data collection and analysis were performed by Marija Branković and Radosław Rogoza. The first draft of the manuscript was written by Marija Branković and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

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Availability of data and material The datasets generated during and/or analysed during the current study are available in the Open Science Framework repository at https://osf.io/nqp5h/?view_only=e61af24eecb94a00890d30d93a68aae0

The questionnaire (Humor Styles Questionnaire) in Serbian translation is available at <https://osf.io/3ps6y/>.

Declarations

Ethics approval The study was performed in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki and the Ethical Code of the Serbian Psychological Association. Explicit approval was not required since the institutional ethics committee was not established at the moment of data collection.

Consent Informed consent was obtained from all individual participants prior to their participation. Participation was anonymous, and no sensitive data were collected.

Competing interests The authors have no conflicts of interest to declare that are relevant to the content of this article.

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