



Why aren't you laughing? – The effect of dark and light humor on anxiety and affective state

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ABSTRACT

Humor plays a significant role in mental health, with several studies confirming its positive effects on anxiety and coping, yet the emotional impact effects of varying comic styles is underexplored. This study builds upon the comic style framework which categorizes humor into four lighter (fun, humor, nonsense, wit) and four darker styles (sarcasm, cynicism, satire, irony). We aimed to investigate how consuming humor content congruent with an individual's comic style impacts anxiety and affective states. A total of 275 participants were categorized based on their comic style preferences (Low Engagement, Light Preference, Dark Preference, Broad Engagement) and exposed to video clips representing both light and dark humor. Anxiety levels and positive and negative affect were measured before and after each viewing. Our results show that participants experienced less anxiety and more positive affect after viewing humor congruent with their preferred comic style. Conversely, incongruent content tended to increase anxiety and negative affect, particularly among individuals with a preference for light humor when exposed to dark humor. These findings suggest that humor congruence plays a critical role in regulating emotional responses, with light humor providing a buffer against anxiety for most participants, while dark humor's impact varies depending on individual preferences.

1. Introduction

A growing body of research has investigated the roles that humor plays in our everyday lives and (mental) health. Research shows that humor positively affects mental health by reducing anxiety and stress (Ford et al., 2017; Kuiper, 2012; Szabo, 2003). However, some forms of it are adaptive, while others seem to be less desirable and less healthy (Dozois et al., 2009; Kuiper et al., 2004). Martin et al. (2003) identified four distinct humor styles describing how individuals use humor in everyday situations. Two styles (affiliative and self-enhancing) are described as more positive, adaptive humor, while the other two (aggressive and self-defeating) are maladaptive, negative types of humor. Previous studies have also categorized individuals into clusters based on humor style patterns. Leist and Müller (2013) found 'humor endorsers' and 'humor deniers', and a third, mixed cluster called 'self-enhancers'. Some of these clusters overlap with the findings of Galloway (2010), who identified four clusters: individuals who have (1) increased overall use of humor, (2) decreased overall humor use, (3) greater

tendency to use positive humor styles, and (4) increased use negative humor styles.

Researchers have observed various types of correlations between anxiety and the four humor styles using the Humor Styles Questionnaire (HSQ; Martin et al., 2003) and found that positive and negative humor styles have a different correlation with one's anxiety levels. More specifically, lower anxiety levels have been linked to higher levels of affiliative humor (e.g., Ford et al., 2017; Kuiper et al., 2014; Martin et al., 2003), whereas high anxiety levels were associated with higher levels of self-defeating humor (Kuiper et al., 2004, 2014; Schneider et al., 2018). However, studies in the field of challenging occupations (such as medical professionals, veterans, or law enforcement officers) have repeatedly found that dark humor is an effective coping strategy (Gayadeen & Phillips, 2016; Rowe & Regehr, 2010; Yoshimura et al., 2024), mainly through the use of reappraisal of the situation.

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1.1. Experimental approaches in humor research

Previous studies investigated humor in experimental settings. A classic study by Szabo (2003) found that humorous content (i.e. stand-up comedy) lowers state anxiety. Ibarra-Rovillard and Kuiper (2011) asked participants to read comments made by an acquaintance and found that humor enhanced positive reactions to the comments in general, even when the comment itself was just described as humorous. Studies have also delved into the different effects of humor styles. For example, (Samson & Gross, 2012) showed participants either negative or positive valence pictures and asked them to either view them, or use positive or negative humor to appraise them. They found that using positive (as compared to negative) humor was better at down-regulating negative, and up-regulating positive emotions. A similar study was conducted by Ford et al. (2017), who asked participants to imagine that they had to take a math test and maintain a humorous perspective while in anticipation, after which they read jokes about math tests and subsequently had to joke about their own abilities. The humor style of the jokes varied based on the experimental condition. They found that state anxiety associated with the stressful event (i.e., the math test) was reduced when using self-enhancing (compared to using self-defeating) humor. While these studies add to the literature on how humor helps in everyday situations, they all used Martin et al.' (2003) humor styles, and there are few studies to our knowledge that have investigated similar aspects in the context of comic styles, which is a newer approach to humor (Ruch, Heintz, et al., 2018).

1.2. The comic styles framework

As an alternative and complimentary use to the four humor styles, Ruch, Heintz, et al. (2018) introduced eight comic styles which can be categorized into four lighter and four darker styles. The four lighter styles are fun, humor, nonsense, and wit, and “are very diverse despite sharing a more positive basis of interpersonal cooperation, benevolence, positive emotions, and cognitive capabilities” (Ruch, Heintz, et al., 2018, p. 3). *Fun* means jesting, teasing, in a very social and uplifting way. *(Benevolent) Humor* is related to sympathy regarding everyday happenings and shows acceptance of others and their shortcomings. *Nonsense* is playful, ridiculous, and absurd. *Wit* – while containing some characteristics of darker styles – is also considered a light style, using surprising punchlines, wordplays, and connects ideas or thoughts for comical effect. In the center of the four darker styles (sarcasm, cynicism, satire, and irony) is the mockery and ridicule of others. *Sarcasm* is close to Schadenfreude: often hostile, prefers to subordinate its audience and focuses on the corruption of the world. *Cynicism* uses ridicule to highlight the world's weaknesses, and devalues principles, moral concepts, and norms. *Satire*, like the previous two, detects weaknesses and is aggressive, being critical and using ridicule to compare the real world to an ethical one. *Irony* is expressed by saying things in a different way than they are meant, assuming that those smart enough will understand, mocking the stupid at the same time. Research examining the relationship between the Martin and Ruch models has shown that there is significant overlap between affiliative humor and fun; aggressive humor and sarcasm; and self-enhancing and benevolent humor (Heintz & Ruch, 2019).

Despite the fact that comic styles are a relatively recent addition to humor research, there is already a growing body of literature on them. Studies have investigated their association with Eysenckian PEN personality factors (Ruch, Heintz, et al., 2018), self-assessed wisdom (Webster & Heintz, 2023), seriousness and bad mood (Heintz, 2023), positive and negative affectivity (Chang et al., 2024; Ruch, Wagner, et al., 2018), worry and well-being (Dionigi et al., 2021), the Dark Triad and Dark Tetrad traits (Chang et al., 2024; Dionigi et al., 2022; Torres-Marín et al., 2022), as well as depression and anxiety (Dionigi et al., 2023). Correlations between these traits and the lighter and darker comic styles can be found in Table 1.

Table 1

Key findings on the correlations between personality traits and comic styles, with lighter and darker styles presented collectively.

Trait	Correlation with Lighter styles	Correlation with Darker styles	Citation
PEN Psychoticism	small positive	small to medium positive	
PEN Extraversion	medium to large positive		(Ruch, Heintz, et al., 2018)
PEN Neuroticism	small negative	small positive	
Positive Affectivity	medium positive	small negative (cynicism)	
	–	small negative (irony)	(Chang et al., 2024)
Negative Affectivity	small positive (benevolent)	small to medium positive	(Chang et al., 2024; Ruch, Heintz, et al., 2018)
Life satisfaction	small positive	small negative (cynicism)	(Ruch, Heintz, et al., 2018)
Self-Assessed Wisdom	medium to large positive	small to medium positive	
Optimism	–	small to medium negative	(Webster & Heintz, 2023)
Resilience	small positive (benevolent)		
Search for Meaning in life		small positive (irony)	
Cheerfulness	medium to large positive	medium positive	
Seriousness	medium negative		(Heintz, 2023)
Bad Mood	large negative	medium positive	
Worry	small to medium negative	medium positive (cynicism)	(Dionigi et al., 2021)
Well-Being	medium positive	small positive (satire)	
		medium to large positive (SD3)	(Dionigi et al., 2022; SD3) (Chang et al., 2024; Torres-Marín et al., 2022; DT4)
Machiavellianism (SD3)	small to medium positive (SD3)	large positive (DT4)	(Dionigi et al., 2022; SD3) (Chang et al., 2024; Torres-Marín et al., 2022; DT4)
Psychopathy (SD3)	small to medium positive (SD3), medium positive (DT4)	large positive (SD3), medium to large positive (DT4)	(Dionigi et al., 2022; SD3) (Chang et al., 2024; Torres-Marín et al., 2022; DT4)
Narcissism (SD3)	small to large positive (SD3), medium to large positive (DT4)	small to medium positive	(Chang et al., 2024; Torres-Marín et al., 2022; DT4)
Sadism (DT4)	small to medium positive	medium to large positive	(Torres-Marín et al., 2022)
Depression	small negative (humor), small positive (nonsense)	small positive	
Anxiety	small negative	small positive	(Dionigi et al., 2023)
Stress	small negative (humor), small positive (nonsense)	small positive	
Agreeableness	–	small to large negative	
Conscientiousness	–	medium negative	(Chang et al., 2024)
Openness	–	small positive (irony)	

Note. Where a correlation is specific to one style (e.g., benevolent humor for lighter styles or sarcasm for darker styles), this is indicated in brackets. Effect size estimations were based on Gignac and Szodorai (2016).

Despite the growing interest, to our knowledge there has been no experimental study using the Comic Styles framework.

1.3. Present research

Our research extends this by measuring anxiety and affective state before and after consuming funny cartoon videos to see how light and dark humor affect the current state, and by examining humor clusters in relation to the Comic Styles framework. Specifically, our question was whether consuming content that is similar to one's comic style cluster (i. e. congruent content) has an effect on mood change, as compared to consuming content that does not match one's comic style (i.e., incongruent content). Our *first hypothesis* was that anxiety levels will be lower after watching scenes that match an individual's own humor clusters as measured by their comic styles but higher after viewing incongruent scenes. Our *second hypothesis* was that consuming content that is congruent with one's comic cluster would have a positive effect on affective state (as evidenced by lower levels of negative affect (NA) and higher levels of positive affect (PA)), whereas incongruent content would have a negative effect on affective state (as evidenced by higher levels of PA and lower level of NA).

2. Methods

2.1. Participants

We determined the required sample size using G*Power 3 (Faul et al., 2007). The conservative approach ($f^2 = 0.010$, $1-\beta > 0.95$, $\alpha = 0.05$) indicated a minimum of 260 participants. Of the 277 individuals who participated, 2 had to be excluded due to answering randomly. The final sample ($N = 275$) comprised 183 females, 89 males, and 3 who did not specify their gender, with a mean age of 25.0 years ($SD = 8.66$). Most participants held a high school diploma (179), followed by individuals holding a Bachelor's Degree ($n = 64$), Master's Degree ($n = 29$), and PhD ($n = 3$). The majority of participants (75.63 %) was of Hungarian nationality, while the other participants were mainly international students, as data was collected through social media and university channels.

2.2. Instruments

2.2.1. CSM-24

We used the 24-item short version (Torres-Marín et al., 2024) of the Comic Style Markers (CSM) questionnaire, originally developed by Ruch, Heintz, et al. (2018). The questionnaire consists of 8 subscales that describe the eight comic styles of *Fun*, (*Benevolent*) *Humor*, *Nonsense*, *Wit*, *Irony*, *Satire*, *Sarcasm*, and *Cynicism*. In the shortened version each comic style scale has 3 items evaluated on a 7-point Likert scale ranging from 1 (*Strongly disagree*) to 7 (*Strongly agree*). Total scores refer to the average of the three items, with higher scores corresponding to more frequent use of that specific comic style. It is important to note that these comic styles do not refer to the type of content one prefers to consume, but rather the comic style one uses preferentially. The descriptive data and reliability for each baseline measure of the factors can be found in Table 2.

2.2.2. STAI-5

The original Spielberger State-Trait Anxiety Inventory (STAI; Spielberger et al., 1970) is used to assess the level of anxiety that a person experiences in that particular moment (STAI-S subscale; measuring state anxiety) and the extent to which an individual feels anxious in general (STAI-T subscale; measuring trait anxiety).

We used the short (5-item) version of the questionnaire (Zsido et al., 2020), where the items are presented in a 4-point Likert scale, ranging from 1 (Not at all) to 4 (Very much so).

Table 2

McDonald's ω values for the CSM factors and baseline measures of the STAI-5 and I-PANAS-SF.

Questionnaire	Factor	Mean	SD	McDonald's ω
CSM	Fun	4.67	1.37	0.77
	Humor	5.32	1.06	0.67
	Nonsense	4.82	1.31	0.64
	Wit	4.51	1.21	0.74
	Cynicism	3.86	1.24	0.67
	Irony	4.85	1.16	0.67
	Satire	3.88	1.34	0.70
	Sarcasm	3.98	1.41	0.73
STAI-5	Trait			0.80
	State	1.69	0.706	0.84
PANAS	Positive Affectivity	2.78	0.962	0.83
	Negative Affectivity	1.97	0.907	0.84

2.2.3. I-PANAS-sf

In order to measure the participants' current affective state, we used the short version of the Positive and Negative Affect Schedule which was developed by Thompson (2007). The I-PANAS-SF is a self-report measure that is able to assess both positive and negative (affect at the same time. It includes 10 items, 5 for positive, and 5 for negative affect, which have to be rated on a 5-point Likert scale ranging from never to always. Participants had to answer for each item at that given moment.

2.3. Stimulus material

The questionnaire involved 6 videos in total from various comedy cartoon shows and movies, which represented the different comic styles to measure what kind of humor participants enjoy, 3 of which contained Lighter comic style, and 3 which contained Darker comic style scenes. The scenes were chosen due to the adherence to either the lighter or darker comic styles by independent raters. Details on the selection process can be found in Supplementary Material 1.

Light humor scenes were chosen from Zootopia (Howard et al., 2016), and SpongeBob SquarePants (Hillenburg et al., 1999-present), while Dark humor ones were from Family Guy (MacFarlane et al., 1999-present), The Simpsons (Brooks et al., 1989-present), and South Park (Parker et al., 1997-present). The videos used are available on the Open Science Framework.

2.4. Procedure

Participants completed a 20-min self-report questionnaire in English, measuring trait anxiety and comic styles. The survey was voluntary, anonymous, and distributed via social media to individuals over 18.

In the second half of the questionnaire, participants were shown six (grouped into 3 light and 3 dark style humor sections) video scenes from different animated cartoons. Participants had to rate how much they liked each scene on a 10-point Likert scale ranging from 1 = "not at all" to 10 = "very much". Current anxiety levels and affective states were measured before and after each block (3 times total). The order of the light- and dark blocks was counterbalanced.

2.5. Analysis plan

We calculated participants' average scores for each CSM subscale, and for all three measures of STAI-S and I-PANAS-SF, respectively. We also categorized each participant based on their answers to the CSM questionnaire, similarly to the work of Galloway (2010). First, we calculated the median score (dark humor: 4.08; light humor: 4.83), then we categorized each participant into four possible groups based on these scores. The groups were: (1) 'Low Engagement': indicating low scores on both light and dark humor scales; (2) 'Light Preference' indicating low scores of dark, but high scores of light humor; (3) 'Dark Preference', for high scores in dark and low scores in light humor scales; and (4) 'Broad

Engagement’ for high scores in both light and dark humor scales. When referring to *comic clusters* from this point on, we refer to one of the above labels. Additional descriptive statistics regarding the clusters are provided in Table 3.

Additionally, we controlled the familiarity of participants with the comic scenes. This was accounted for by two variables ranging from 0 to 3, to signal how many of the dark- and light humor videos the participants had seen, respectively.

To test our hypotheses, we ran two Mixed ANOVAs. First, we examined the change in anxiety levels in a 3×4 analysis by examining the three measurements of STAI as repeated measure factor. Then, we ran a $3 \times 2 \times 4$ ANOVA with PA and NA levels for all three measurements. Participants’ comic cluster was added as a between-subject factor, and the number of seen videos was included as covariate.

3. Results

Our first hypothesis was that anxiety levels would be lower after watching scenes that correspond to the individual’s own comic style. We found a main effect for anxiety ($F(2, 538) = 28.87; p < .001; \eta_p^2 = 0.097$) as well as an interaction between anxiety level and comic cluster ($F(6, 538) = 2.917; p = .008; \eta_p^2 = 0.032$). Comic cluster also had a significant main effect ($F(3, 269) = 8.197; p < .001; \eta_p^2 = 0.072$). Neither the familiarity with the light, nor the dark humor videos had significant between subject effects ($(F(1, 269) = 0.880; p = .349; \eta_p^2 = 0.003)$ and ($F(1, 269) = 0.465; p = .496; \eta_p^2 = 0.002$, respectively). Tukey-corrected post-hoc tests (see Table 1 in Supplementary Material 2) revealed that anxiety levels became lower after watching the light-, and higher after watching the dark humor videos. When examining the interaction between anxiety and comic cluster we ran separate ANOVAs for the respective category of people, the results are shown in Fig. 1. For *Low Engagement individuals*, we found that anxiety levels were significantly lower after watching light content, and higher than the baseline after watching dark content ($F(2, 174) = 16.0; p < .001; \eta_p^2 = 0.155$). *Light Preference individuals’* anxiety did not change after watching light videos, but got higher after watching dark videos ($F(2, 78) = 12.9; p < .001; \eta_p^2 = 0.249$). In the case of *Dark Preference participants*, there was no significant change in anxiety after neither the light, nor the dark humor videos ($F(2, 90) = 1.08; p = .344; \eta_p^2 = 0.023$). Finally, in *Broad Engagement individuals* we found that anxiety got significantly lower after light videos but did not change after dark videos when compared to the baseline ($F(2, 200) = 9.34; p < .001; \eta_p^2 = 0.085$).

Our second hypothesis was that consuming content that fits one’s comic cluster would have a positive effect on the current affective state, while incongruent content has a negative effect. To test this, we examined the ANOVA containing positive (PA) and negative (NA) affect data in all three measurements (results are shown in Fig. 2). We found that the affect type and comic cluster interact with each other ($F = 3, 269) = 11.641; p < .001; \eta_p^2 = 0.095$). Time and affect type also interact ($F(2, 538) = 27.694; p < .001; \eta_p^2 = 0.093$); as well as time, affect type and category ($F(6, 538) = 3.100; p = .005; \eta_p^2 = 0.033$). Cluster had a between-subject effect ($F(3, 269) = 3.987; p = .008; \eta_p^2 = 0.043$). Familiarity with the light, or the dark humor videos had no significant

between-subject effects in this case either ($(F(1, 269) = 1.969; p = .162; \eta_p^2 = 0.007)$ and ($F(1, 269) = 0.079; p = .778; \eta_p^2 = 0.000$, respectively). To examine these results further, we ran ANOVAs separately for each comic cluster, the results of which are detailed in Supplementary Material 2 (Table 2).

Levels of PA were generally higher than levels of NA in all comic clusters. In the *Low Engagement group*, participants experienced a reduction in PA after both light- and dark humor videos, with no difference between the two. NA also decreased after both types of videos but this decrease was more pronounced following light humor videos. Participants in the *Light preference category* had lower levels of PA after both the light- and dark humor videos, with no difference between the two. However, their levels of NA did not change compared to the baseline after watching neither light nor dark videos, but NA was slightly higher after watching dark humor videos than after watching light humor videos. *Dark Preference individuals* had a lower PA level after watching the videos (as compared to the baseline), but no difference between the after dark and after light videos. Their NA lowered after both types of videos, but more after the light than after the dark videos. In the *Broad Engagement group*, PA became lower after watching both light- and dark videos, with no difference between light- and dark humor. NA levels also lowered after watching light videos but were higher than light and lower than baseline after watching dark videos.

Not strictly related to the hypotheses, we found that the time of the measurement had a significant effect ($F(2, 542) = 57.113; p < .001; \eta_p^2 = 0.174$), with the baseline affective state being higher than after watching each category of videos. We also found a main effect for type of affective state with positive affect levels being significantly higher ($F(1, 271) = 150.999; p < .001; \eta_p^2 = 0.358$).

4. Discussion

The present study aimed to contribute to the understanding of comic styles, a relatively new concept introduced by Ruch, Heintz, et al. (2018). While previous studies have examined the effects of humor on anxiety and affective states using the Humor Styles Questionnaire by Martin et al. (2003), our study is the first to investigate how lighter and darker styles of humor affect current emotional states and anxiety based on individual comic style preferences. We showed participants lighter- and darker style humor videos (separately) and asked them how they feel after each block of videos, which were then compared considering the participants’ own comic style preferences (comic clusters).

In the Low Engagement cluster, our hypothesis was partially supported as anxiety decreased after watching lighter style videos but increased after watching darker style videos. Additionally, PA decreased after both types of humor, while NA decreased more after light humor videos. This suggests that light humor, which is generally more benign and socially acceptable, can serve as an effective coping mechanism even for those who do not typically engage in humor. The reduction in anxiety and NA might be attributed to the reframing effect of benign humor, which helps individuals reinterpret stressful situations in a less threatening manner (Dionigi et al., 2023; Papousek, 2018). This aligns with the findings of Samson and Gross (2012), who demonstrated that positive humor is effective in down-regulating negative emotions and up-regulating positive emotions through cognitive reappraisal. Conversely, the increase in anxiety and the less pronounced decrease in NA after exposure to darker style humor could be due to the challenging and potentially distressing nature of dark humor, which may not align with their usual coping strategies. This is consistent with the idea that dark humor can sometimes exacerbate negative emotions in individuals not accustomed to it (Samson & Gross, 2014). Furthermore, Zsila et al. (2021) found that individuals with low levels of all humor styles were less likely to watch animated sitcoms regularly, suggesting that those with low engagement in humor may have different emotional responses to humor content, although our results did not show an effect of familiarity with the scenes.

Table 3
Cluster affiliations in the total sample and based on gender.

	n (%)	n female (% of total)	n male (% of total)	n other (% of total)
Low Engagement	88 (32.0 %)	71 (25.8 %)	15 (5.5 %)	2 (0.7 %)
Light Preference	40 (14.5 %)	34 (12.4 %)	6 (2.2 %)	0 (0.0 %)
Dark Preference	46 (16.7 %)	28 (10.2 %)	18 (6.5 %)	0 (0.0 %)
High Engagement	101 (36.7 %)	50 (18.2 %)	50 (18.2 %)	1 (0.4 %)

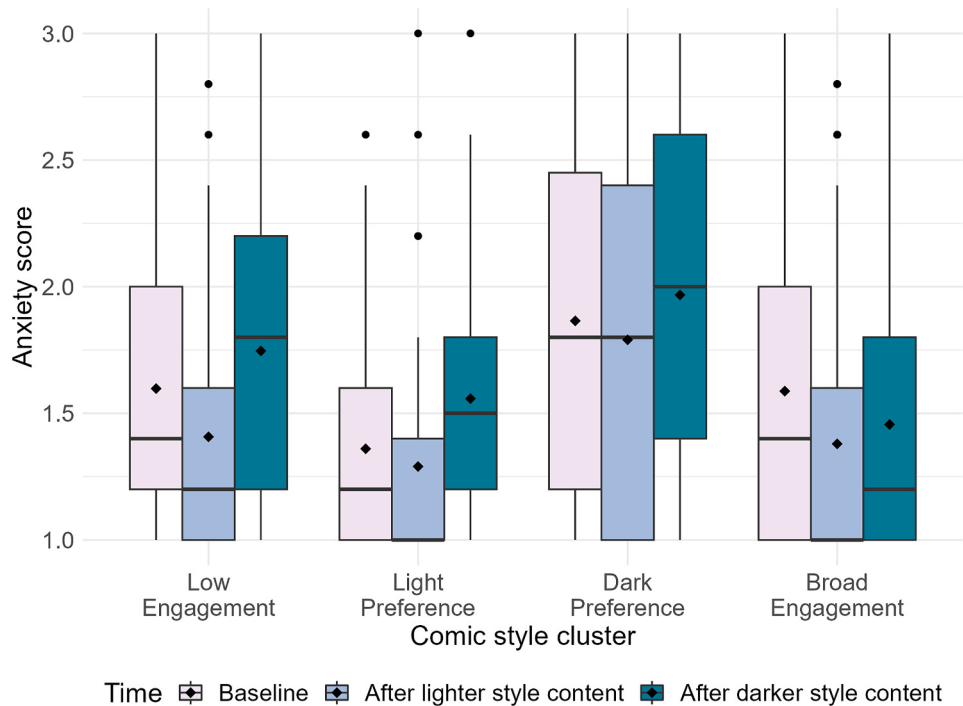


Fig. 1. Changes in anxiety level after watching humorous content.

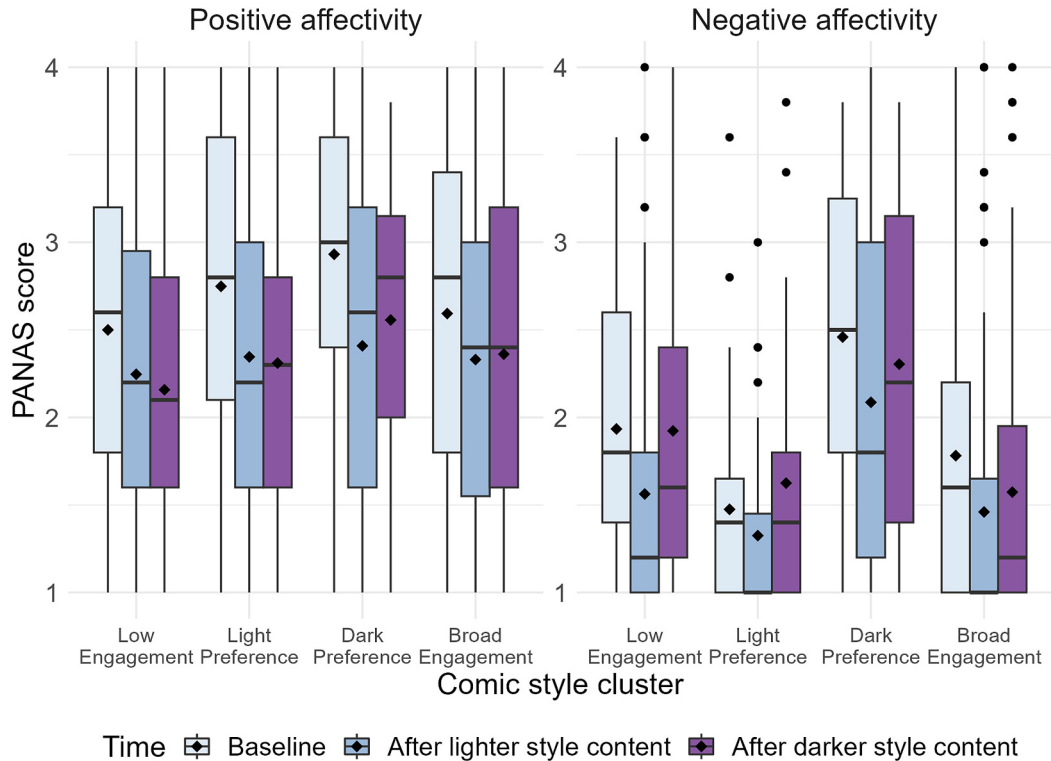


Fig. 2. Changes in positive and negative affectivity levels after watching humorous content.

Participants in the Light Preference cluster had no change in anxiety and NA levels after the lighter style videos, which conceptually matched their own comic style. Their anxiety levels increased after darker style videos, and both types of stimuli resulted in a decrease in positive affect, with no significant difference between light and dark humor. This indicates that darker humor, which often involves mockery and ridicule, can be distressing for individuals who prefer more positive and

affiliative forms of humor. The unchanged anxiety and NA after exposure to lighter humor suggests that these individuals are already well-regulated by their preferred comic style, which aligns with theories that lighter humor is less likely to evoke strong emotional reactions (Dionigi et al., 2023). Additionally, Ford et al. (2017) have shown that engaging in self-enhancing humor, a form of light humor, reduced state anxiety, supporting the idea that light humor is generally beneficial for

emotional regulation. The decrease in PA after both types of humor suggests that even preferred humor styles may not always enhance mood, possibly due to the experimental setting or the specific content of the videos. This is in line with the findings of Kugler and Kuhbandner (2015), who suggested that while humorous reappraisal can reduce negative emotions, it may not always increase positive emotions in every context. Those with a positive, lighter sense of humor are also less likely than those with a darker sense of humor to experience anxiety and tension and to perceive stressful life situations negatively (Dionigi et al., 2023; Kuiper, 2012), which might contribute to our findings.

For the Dark Preference cluster, there was no significant change in anxiety levels after watching either type of humor. Positive affect decreased after both types of humor, while NA decreased more after light humor videos than dark humor videos. This finding suggests that individuals who appreciate dark humor may have developed a tolerance or desensitization to both light and dark humor content. The lack of change in anxiety levels could be due to their ability to use cognitive reappraisal strategies effectively, allowing them to reinterpret potentially distressing humor in a less negative light (Rowe & Regehr, 2010). This is supported by the work of Samson and Gross (2014), who found that individuals who frequently use humor as a coping mechanism are better at regulating their emotions through cognitive reappraisal. The overall decrease in PA indicates that while dark humor may not increase anxiety, it also does not significantly enhance mood, highlighting the complex emotional dynamics associated with dark humor. This complexity is further illustrated by Dionigi et al. (2023), who found that while dark humor can be a coping mechanism, it does not always lead to positive emotional outcomes.

Individuals in the Broad Engagement cluster exhibited a decrease in anxiety and NA after watching light humor videos but no change in anxiety after watching dark humor videos. Positive affect decreased after both types of humor, with no significant difference between light and dark humor. This suggests that light humor is more effective in reducing anxiety and NA in these individuals, possibly due to its more universally positive and benign nature. The lack of a strong negative response to dark humor may be due to their broader appreciation of different humor styles, which allows them to process and enjoy a wider range of humorous content without significant emotional distress. This aligns with the findings of Kuiper et al. (2014), who noted that individuals with a positive sense of humor were better at coping with stress and anxiety. The decrease in PA after watching humorous content suggests that these individuals experience a general mood stabilization effect, where humor helps to balance their emotional state. This is consistent with the idea that humor can serve as a regulatory mechanism to stabilize emotions, as suggested by Kugler and Kuhbandner (2015). Zsila et al. (2021) found that individuals with high levels of both self-enhancing and aggressive humor were more likely to watch animated sitcoms, indicating a broad engagement with different humor styles, which aligns with the characteristics of this cluster.

4.1. Limitations

Our study has some limitations. First, the short-term nature of the experiment does not allow us to draw conclusions about the long-term effects of humor exposure on anxiety and affect. Second, cultural factors could play a role in how humor is perceived, and our findings may not generalize across different cultural contexts.

4.2. Conclusion

Overall, our research demonstrates that comic style plays an important role in modulating anxiety levels and affective states after exposure to humor content. Lighter style humor appears to be more effective in reducing anxiety and negative affect across different humor styles, whereas darker humor can increase anxiety in individuals unaccustomed to it. These findings highlight the importance of considering

individual humor preferences when using humor as a psychological tool for emotional regulation. Future research could explore the long-term effects of humor exposure and the impact of cultural differences on humor perception.

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CRediT authorship contribution statement

Julia Basler: Writing – review & editing, Writing – original draft, Supervision, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Dorottya Potó:** Writing – original draft, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Kata Kumli:** Writing – original draft, Investigation, Formal analysis, Data curation. **Márk Ferincz:** Writing – original draft, Methodology, Formal analysis, Data curation, Conceptualization. **Sára Kárpáti:** Writing – original draft, Methodology, Formal analysis, Data curation. **András Norbert Zsidó:** Writing – review & editing, Writing – original draft, Supervision, Funding acquisition, Conceptualization.

Ethics approval and consent to participate

The research was approved by the Hungarian United Ethical Review Committee for Research in Psychology (EPKEB; no. 2023–18) and conducted in accordance with the World Medical Association's Code of Ethics (Declaration of Helsinki). Written informed consent was obtained from all participants.

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Declaration of competing interest

None.

Data availability

The final dataset is available on the Open Science Framework: <https://osf.io/grwn4/>

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