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Schadenfreude and life satisfaction: effect of anger and aggressiveness

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Abstract. Many individuals become aggressive in reaction to an actual or potential danger, or it can be a learned behaviour that assists them in meeting their needs. Anger is a natural emotion that everyone feels at different moments. It is, in effect, a normal reaction to a challenge, assisting us in preparing for defence or standing up for ourselves. It usually occurs as a response to thoughts or feelings such as pain, irritation, worry, envy, discomfort, rejection, or shame. The purpose of this investigation is to examine effects of trait anger (AN) and aggressiveness (AG) on life satisfaction (LS) of general adult population, as well as to determine whether trait anger (AN) moderates the mediating effect of aggressiveness (AG) in the schadenfreude (SCH) – life satisfaction (LS) relationship. 390 individuals responded to an online investigation, selected via convenience sampling. Trait anger was found to moderate the effect of schadenfreude and life satisfaction. Increased levels of aggressiveness were linked to low levels of life satisfaction. Conditional effects found a stronger association between schadenfreude and aggressiveness for those low in trait anger relative to those high in trait anger. Participants with low scores in trait anger and high scores in schadenfreude had higher levels of aggressiveness than individuals with low scores in trait anger. Conclusions and implications are discussed.

Keywords. Life satisfaction, anger, aggressiveness, schadenfreude, moderated mediation, Process model 7

1. Introduction

Many individuals become aggressive in reaction to an actual or potential danger, or it can be a learned behaviour that assists them in meeting their needs. Anger is a natural emotion that everyone feels at different moments. It is, in effect, a normal reaction to a challenge, assisting us in preparing for defense or standing up for ourselves. It usually occurs as a response to thoughts or feelings such as pain, irritation, worry, envy, discomfort, rejection, or shame. The purpose of this investigation is to examine effects of trait anger (AN) and aggressiveness (AG) on life satisfaction (LS) of general adult population, 390 respondents to an online investigation,

selected via convenience sampling, as well as to determine whether trait anger (AN) moderates the mediating effect of aggressiveness (AG) in the schadenfreude (SCH) – life satisfaction (LS) relationship.

2. Literature review

2.1. Life satisfaction

Individuals' subjective thoughts and opinions about their own lives (Demeter, Rad, 2020; Demeter, Rad, 2021) are reflected in how they express their life satisfaction (Anand, 2016). The construct of life satisfaction may be depicted by a succession of cognitive assessments in general (Shin, Johnson, 1978). Life satisfaction is referred to by some authors as a subjective type of well-being (Diener, 1985). Subjective wellbeing is defined as individual or personal assessments of life conditions, which can include affective (incidence of experiencing favorable or unfavorable life affects) and cognitive (general life satisfaction reasoning across different areas like educational, professional life, clinical condition, interpersonal interactions, and so on) components. Access to various types of financial and intellectual resources (money, nourishment, material goods, education, health services, and knowledge access), as well as the establishment of social ties, are all possible determinants of life satisfaction (positive familial relationships, social status, social influence, and social alliances) as well as the presence of certain individual abilities (cognitive, physical and social skills) (Capone et al., 2019; Proctor et al., 2009; Proctor et al., 2010; Proctor, Linley, 2014; Veenhoven, 2009).

Concerning problematic behaviors, studies have concluded that increased levels of life satisfaction are linked with reduced levels of problematic behaviors and increased pro-social behavior (Proctor, Linley, 2014; Mohamad et al., 2014; Sun, Shek, 2012; Caprara, Steca, 2005). Behavioral problems are frequently linked to antisocial behaviors in the findings (Botvin et al., 2006; Maxwell, 2002; Lahey et al., 2006). A poor socioeconomic origin, a scarcity of schooling, or a very poor education have all been related to the development of antisocial tendencies, family dysfunction, and deviant companions (Marica, 2007; Millie, 2009; Shoemaker, 2009). All of the aforementioned characteristics have been linked to a lack of life satisfaction (Henry, 1994; Jradi, Abouabbas, 2017), which might contribute to the emergence of antisocial behaviors (MacDonald et al., 2005).

Life satisfaction is a criterion-based evaluation procedure in which people evaluate own living quality according to individual indices (Pavot & Diener, 1993; Shin & Johnson, 1978). Along with emotional well-being, life satisfaction is recognized as a crucial expression of self-construct (Markus, Kitayama, 1991; Kitayama et al., 2015), and some researchers have recently shown that the impacts of self-constructs on life satisfaction are mediated through anger management. In the United States and Japan, researchers discovered that emotion expression, when combined with social support, mitigated the effects of self-constructs on life satisfaction (Novin et al., 2014). The authors contend that anger management mechanisms influence the impacts of self-constructs on life satisfaction and that these mechanisms differ between the United States and Japan.

2.2. Relations of life satisfaction with anger, aggressiveness, and schadenfreude

Researchers discovered a negative association between anger level and psychological well-being in a study (Diong et al., 2005). In a similar study, (Chung, Kim, 2017) discovered that both general anger and anger specific to motherhood predicted women' life satisfaction. They also discovered that life satisfaction had a positive correlation with anger management

and a negative correlation with anger expression. As evidenced by the research, anger arises as a result of disputes in interpersonal relationships, and it can have a negative influence on life satisfaction. Another factor that influences an individual's level of anger is their level of life satisfaction. Individuals' perspective and judgment of their own lives were described as life satisfaction (Diener et al., 1985). Furthermore, individual life satisfaction includes the willingness to modify one's life, contentment with the past or future, connections in one's local environment, and all perspectives on one's own life (Diener et al., 1999). Professional and family life, leisure activities, health, money, and one's own self were identified as areas of contentment in an individual's life (Seligman, Csikszentmihalyi, 2000). People who are content with their living are more agreeable with their family and friends and have greater academic accomplishment (Gilman, Huebner, 2006). Individuals with poor life satisfaction, on the other hand, were shown to have high levels of felt stress, sadness, and loneliness (Extremiera et al., 2009), subjective well-being was linked to self-esteem and optimism, and personality traits.

Aggressiveness is a trait that captures cognitive (hostility), affective or emotional (anger), and behavioral components (aggression). The common affective component of aggressiveness is anger, the behavioral component is aggression or violence, and the cognitive component is hostility (Martin, Watson, & Wan, 2000). Hostility is often described as unfavorable attitudes or cognitive features aimed at others, anger as an emotional state that ranges from moderate or irritant to severe rage and aggressiveness as a verbally or physically pattern manifested in shouting, infighting and other forms of violence (Chida, Steptoe, 2009).

Researchers frequently describe human aggressiveness as any behavior that is meant to damage an individual motivated for avoiding such treatment (Anderson & Bushman, 2002; Baron & Richardson, 1994). Despite some discussion about the relative stability of aggressiveness (Geen, 1990, Geen, 2001), researchers have demonstrated significant evidence that aggression stability is constant (Deluty, 1985; Olweus 1979). The concept of trait aggression (Bergman, McIntyre, James, 2004) or trait anger is a general propensity to participate in aggressive actions (Douglas & Martinko, 2001, Hershcovis et al., 2007). Trait anger is the emotional component of trait aggressiveness, and it is characterized as a proclivity to feel more furious and an inability to control how those angry feelings are expressed behaviorally. Individuals with high levels of trait aggression and trait anger are more prone than others to have aggressive thoughts and feelings, as well as to behave aggressively. Anger has been widely identified as one of the most researched aggressive predictive factors (Wilkowski & Robinson, 2008). In the literature, anger has also been described as a state and a trait (Deffenbacher et al., 1996; Wilkowski & Robinson, 2010). Trait anger is a dispositional trait that involves stable individual differences in state anger regularity, duration, and amplitude (Spielberger, 1999; Wilkowski & Robinson, 2010). In addition, several studies found that trait anger is a stronger predictor of aggressiveness than state anger (Deffenbacher et al., 1996). The objective of this study was therefore to evaluate the effect of trait anger and aggressiveness on the relationship between schadenfreude and life satisfaction.

2.3. Schadenfreude and its relations with aggressiveness and anger

Aggression-induced schadenfreude frequently incorporates social identities. The pleasure derived from witnessing someone suffer stems from the observer's view that the other person's aggravation is for the advancement or acceptance of their own social environment's (in-group) position in comparison to other (out-group) social environment. Basically, depending on the position of a group vs a group, this might do harm. Individualistic and interpersonal competition characterizes Schadenfreude's rivalry. This is due to their inherent

desire to stay ahead of and separate from their companions. Because the spectator is more concerned with his own identification and self-esteem than with his communal identity, some people's suffering fosters pleasure.

There are three forms of "harm-joy" according to a new model of schadenfreude. According to the findings, depersonalization, or the tendency to see people as less than human, is a significant component of schadenfreude. The approach might help researchers better grasp schadenfreude and psychopathic characteristics. Most individuals would certainly deny it, but at some point, in their lives, everyone has felt a little delight at the misery or failure of another person. The sense of satisfaction at other people's suffering is known as schadenfreude, which translates to "harm-joy" in German. Many individuals are affected by it, yet our comprehension of it is still fragile.

The motive for the sentiment is crucial, and there is typically an element of considering others as less than human. The researchers argue that three main motives might fuel the emotion of schadenfreude: aggressiveness, rivalry, and justice, based on decades of study. Schadenfreude based on aggression implies group identity. Often, improving your own group necessitates defeating other groups. This is the form of Schadenfreude you may feel when the competitor of favorite team lose a game and cannot participate in finals, despite the fact that your club is already out of contention. Schadenfreude based on rivalry is comparable yet unique. This one is associated with individual accomplishment and jealousy. It occurs when you go out of your way to exceed someone else while doing nothing to help yourself. The third type is justice-based, and it revolves around the joy we feel when someone we believe ought to be punished, such as a successful person also known for unethical behaviors such as betraying or stealing.

While everyone experiences schadenfreude from time to time, research has shown that those who display the characteristics of Machiavellianism, narcissism, or psychopathy, collectively known as the "dark triad," experience it more frequently. This also applies to sadistic and cruel persons. According to the research, in order to enjoy schadenfreude, people need to dehumanize the individual whose failures are laughed at (Smith et al., 2006; Van et al., 2005). People who show any of the dark triad qualities are already dehumanizing themselves. One theory is that when people are experiencing Schadenfreude, they undergo a temporary scenario similar to that of people with high levels of psychopathic personality traits: motivated by certain situational and, to a lesser extent, dispositional variables, the perceiver tends to dehumanize the victim, temporarily losing interest in tracing the victim's mental state, much like a psychopathic person would. According to the study, those with low self-esteem are more likely to feel schadenfreude when they see others fail (Novin et al., 2014). This is because other people's success may put their sense of self in jeopardy, and seeing the mighty fall may be soothing.

Other studies on schadenfreude (Cikara et al., 2014; Cikara, Fiske, 2012; Cikara, Fiske, 2013) found that a lack of empathy isn't always harmful and that schadenfreude is a human feeling that not everyone experiences. However, a substantial part of the population does. Envy is a natural human emotion, and schadenfreude is one of its components. Knowing that this familiar sensation is related to some of the darker parts of human nature may help us better understand how the darker side of the human brain interacts with the emotions we all feel.

People may feel a variety of emotions when others endure a setback. Individuals might empathize and feel sympathy for the other, or they might experience schadenfreude—pleasure at the misery of another (Heider, 1958; Smith, 2013; Smith et al., 2006; Smith et al., 2009).

Although schadenfreude has a negative meaning, it is a common emotional reaction in inter-personal (Van et al., 2005; Van et al., 2006; Van et al., 2015; Van et al., 2011a; Van et al., 2011b) and inter-group (Cikara et al., 2014; Cikara, Fiske, 2012; Cikara, Fiske, 2013; Leach, Spears, 2008; Leach, Spears, 2009; Leach et al., 2015; Leach et al., 2003) interactions. Thus, a growing body of research has studied the causes of schadenfreude, demonstrating that it is often elicited by disasters occurring in competitive situations (Cikara, Fiske, 2012; Cikara, Fiske, 2013; Smith, 2013; Smith et al., 2006; Smith et al., 2009; Smith et al., 1996) and when onlookers benefit from the misfortune (Smith et al., 2006). In a similar spirit, individuals are glad when an envied target suffers a setback (Van et al., 2006; Cikara, Fiske, 2013; Smith et al., 1996) and when another's suffering is judged to be justified (Feather, Sherman, 2002).

2.4. Moderation and mediating role of anger and aggressiveness

Despite trait anger is demonstrated to have a role in aggressiveness, less evidence has been provided about the processes that mediate and moderate this relationship and as well how the two characteristics impact the overall life satisfaction of the individual. Research studied the mediating function of angry rumination in the connection between trait anger and aggressiveness, as well as the moderating influence of moral disengagement, using the general aggression model (Wang, et al., 2018). In particular, only high moral disengagement individuals had a substantial relationship between anger rumination and aggressiveness, and the connection involving trait anger and aggression became less significant for people who have high levels of moral disengagement (Wang, et al., 2018). The purpose of this research is analyzing the impact of trait anger and aggressiveness on the relationship between schadenfreude and life satisfaction.

3. Research methodology

3.1. Research objectives and hypothesis

In psychological sciences, the use of models that combine mediation and moderation is on the rise. While moderation and mediation are each relatively well known on their own, when they are combined, new combinations arise. Furthermore, there is very no advice on how to justify such models theoretically (Holland, Shore, Cortina, 2017). Some suggest analyzing a succession of models, commonly referred to as a systematic approach, and looking at the overall pattern of findings to see if moderated mediation exists (Muller, Judd, Yzerbyt, 2005). This method is comparable to the Baron and Kenny method for evaluating a series of three regressions to test mediation (Baron, Kenny, 1986). According to these researchers, examining the numerous processes involved in moderated mediation with a single overall test would be insufficient, making it difficult to distinguish between moderated mediation and mediated moderation. Preacher, Rucker, and Hayes (2007) created an SPSS macro including both bootstrapping and Johnson–Neyman analysis (Hayes, 2013).

The purpose of this investigation is to examine effects of trait anger (AN) and aggressiveness (AG) on life satisfaction (LS) of general adult population (390 respondents to an online investigation,) as well as to determine whether trait anger (AN) moderates the mediating effect of aggressiveness (AG) in the schadenfreude (SCH) – life satisfaction (LS) relationship. The proposed moderated mediation model has been tested in a unified framework utilizing a bootstrapping strategy to determine the significance of indirect effects at various moderator levels (Hayes, 2013).

Schadenfreude represents the predicting variable, and aggressiveness the mediator. The outcome variable was life satisfaction, and trait anger was the proposed moderator. The

conditional indirect effects of the moderating variable trait anger are tested in moderated mediation investigation, on the relationship between a predictor schadenfreude and an outcome variable life satisfaction via potential mediator aggressiveness. The PROCESS model 7 (Hayes, 2013) in SPSS with bias-corrected 95 percent confidence intervals with $n = 5000$ was used to test the significance of the indirect, mediated effects moderated by trait anger. The moderating impact on the predictor to mediator path a is specifically tested in this model. To evaluate the importance of moderated mediation, the difference in indirect effects across degrees of anger, an index of moderated mediation was utilized (Hayes, 2013). The lack of zero inside the confidence intervals supports significant effect.

3.2. Participants

Our study relied on 390 participants from Romania, with an age range between 15 and 84, an average age of 31.61 and a $SD=12.07$ years, male respondents (21.3 percent) and female respondents (78.7 percent), 29.5 percent from rural areas and 70.5 percent from urban areas. 34.1 percent of respondents have completed high school, 39 percent have completed a bachelor's degree, 21.8 percent have completed a master's degree, and 5.1 percent have completed a PhD.

For all respondents, an informed consent was obtained. Our research did not have any negative emotional impact on minor respondents.

This investigation used the convenience sampling technique. According to the convenient principle of usability, the total number of participants was chosen on a consecutive basis, after answering an anonymous online, between April and May 2020. Convenience sampling is a form of nonprobability sampling in which individuals are sampled solely because they are "accessible" data sources and in researchers' proximity (Lavrakas, 2008). We have chosen this sampling technique, because during April and May 2020 in Romania there was an imposed COVID-19 quarantine and since all individuals had to isolate themselves from each other, we have considered that no additional other than availability and proximity should be instilled within the purpose of this research.

Participation in the study was totally voluntary, and no monetary reward was provided.

3.3. Instruments

The following instruments have been used in our online inquiry for the benefit of this study.

Trait anger (AN) and aggression (AG) were evaluated with the help of the International Personality Item Pool (Goldberg et al., 2006) and both scales were adapted for Romanian usage by (Iliescu et al., 2015). AN scale ($m=2.17$, $SD=0.97$) has obtained a reliability coefficient of 0.86 (for the 10 items used) and AG scale ($m=1.51$, $SD=0.77$) has obtained a reliability coefficient of 0.71 (for the 10 items used). The average of the survey responses on the AN and AG scale were used for data processing.

This study used a single item question to evaluate schadenfreude ($m=0.31$, $SD=0.79$). This item was designed by the present article researchers. The instruction given was to rate the agreement with the following sentence on a scale of 1 to 5, with 1 representing strongly disagree, 2 representing disagree, 3 representing neither agree nor disagree, 4 representing agree, and 5 representing strongly agree: "I feel good when something bad happens to other people" (Rad et al., 2021). We have considered this single item due to the fact that this research takes into consideration the aggression-based schadenfreude. We have chosen to use single item

schadenfreude measure due to current psychological measurement debates (Crysel, & Webster, 2018; Watanabe, 2019; Cecconi, et al., 2020).

Life satisfaction construct has been assessed with Satisfaction with life scale (SWLS) (Diener et al., 1985). Romanian adaptation was performed by Stevens et al. (2012). The SWLS represent a short 5-item instrument aimed to assess general cognitive judgments of satisfaction with one's life (Kobau, et al., 2010) that has obtained a reliability Chronbach's alpha coefficient of 0.85 (for the 5 items used).

4. Results and discussion

4.1. Preliminary Analyses

Trait anger ($m=2.17$, $SD=0.97$) was positively correlated with both aggressiveness ($m=1.51$, $SD=0.77$) $r=0.59$ at $p<0.01$ and schadenfreude ($m=0.31$, $SD=0.79$) $r=0.166$ at $p<0.01$ while negatively correlated with life satisfaction ($m=5.1$, $SD=1.12$) $r=-0.25$ at $p<0.01$. Aggressiveness was positively correlated with schadenfreude $r=0.35$ at $p<0.01$ and negatively correlated with life satisfaction $r=-0.25$ at $p<0.01$. Schadenfreude was negatively correlated with life satisfaction $r=-0.16$ at $p<0.01$, as seen in Table 1.

Table 1 – Correlation coefficients

| Variables | Mean | Std. Deviation | (1) | (2) | (3) | (4) |
|-----------------------|------|----------------|---------|--------|--------|-----|
| Life satisfaction (1) | 5.12 | 1.12 | | | | |
| Schadenfreude (2) | .31 | .79 | -.167** | | | |
| Anger (3) | 2.17 | .97 | -.254** | .166** | | |
| Aggressiveness (4) | 1.51 | .77 | -.253** | .350** | .595** | |

4.2. Conditional indirect effects

The PROCESS model 7, which evaluates a model in which trait anger moderates the effect of path a, was used to test the hypothesized moderated mediation model (Hayes, 2013). Trait anger was found to moderate the effect of schadenfreude and life satisfaction (Unstandardized interaction $B=-0.14$, $Bse=.05$, $t=-3.01$, $p=.00$).

Higher levels of aggressiveness were associated with lower levels of life satisfaction, $B=-.32$, $Bse=.08$, $t=-4.25$, $p<.001$. The index of moderated mediation = 0.5 (95 percent $CI=.01;.09$) was used to support the overall moderated mediation model. Because zero does not fall inside the CI, this suggests that trait anger has a strong moderating influence on schadenfreude via the indirect effect of aggression (Hayes, 2015). Individuals with the highest trait anger results have had the largest conditional indirect effect (1 SD above the mean of NFC; effect=-.06, $SE=0.3$, 95% $CI=-.12; -.02$) and weakest effects was observed for individuals with low scores on trait anger (1 SD below the mean, effect=-.15, $SE=.05$, 95% $CI=-.24; -.06$).

Individuals with low trait anger ($B=.46$, $Bse=.08$, $t=5.86$, $p=.00$) demonstrated a higher association between schadenfreude and aggressiveness ($B=.18$, $Bse=.05$, $t=3.83$, $p.001$) than those with high trait anger ($B=.18$, $Bse=.05$, $t=3.83$, $p.001$). Participants with low scores in trait anger and high scores in schadenfreude had higher levels of aggressiveness than individuals with low scores in trait anger.

Results of this research show that trait anger was positively correlated with both aggressiveness and schadenfreude, while negatively correlated with life satisfaction.

Aggressiveness was positively correlated with schadenfreude and negatively correlated with life satisfaction. Schadenfreude was negatively correlated with life satisfaction.

The moderated mediation model was used in this study to investigate the psychological aspects behind the association between schadenfreude and life satisfaction, relationship that has never been approach in the scientific literature so far. In summary, the findings revealed that high levels of schadenfreude predicted low life satisfaction via aggressiveness, with the effects of aggressiveness on life satisfaction being mitigated by anger. Anger and aggression are commonly related. Ineffective anger-coping strategies increase negative affect and reduce the regulatory resources needed to restrain aggressive impulses. Factors associated with improved emotion control may reduce the link between anger and aggression (Pond et al., 2012).

5. Conclusions

Anger is a natural feeling that everyone experiences at various times. In effect, it is a typical reaction to a challenge, supporting us in preparing for defense or standing up for ourselves. It may also be used to motivate people to set new objectives or make changes. It frequently happens as a reaction to thoughts or sensations like pain, annoyance, concern, jealousy, discomfort, rejection, or embarrassment. What important is how people express and cope with their fury. Anger that is not effectively managed has consequences for relationships as well as physical and mental health.

Aggression is defined as aggressive, disruptive, and/or violent conduct or action, whereas anger is a feeling/emotion. Physical violence, item hurling, collateral devastation, self-harming behaviors, and verbal assaults or insults are all instances. Many people become violent in response to a real or perceived threat, or it can be a learned behavior that helps them achieve their needs. Individuals are also learning to regulate and value complicated emotions such as frustration. However, because they are constantly trying to figure things out, their general well-being can be highly fragile, making them more susceptible to stress and irritability. People can use anger, like any other emotion, to convey their sentiments of being fearful, furious, misunderstood or overlooked, shamed or humiliated, oppressed, striving to manage a situation, experiencing discomfort, or feeling extremely uncomfortable.

Anger is perceived differently depending on how frequently individuals become furious, how frequently it occurs, how profoundly it is expressed, how long it lasts, and how comfortable they are with experiencing and expressing anger. Individuals, rapidly develop acceptable strategies to regulate such emotions; but, for some, their feelings of anger can be chronic, unstable, and overwhelming. Anger will lead to a decrease in overall life satisfaction in these instances. Although some of these strategies can help people manage emotions in the short term, due to the ever-evolving sophistication of dynamic psychological expressions, they can generate additional psychological issues in the long run.

For thousands of years, we have retained anger and aggressiveness. This typically signifies that something has survived due to genetic conservation because it is adaptable and beneficial. However, in order to be helpful tools in our social environment, both must be trimmed, sculpted, and packaged in a socially acceptable form. During infancy, this process takes several years. This requires patient education as well as prosocial modeling. When under assault, the ultimate outcome should be a multilayered smooth system for regulating social interaction. Anger and aggressiveness are, by definition, social in origin. We are not just furious; we are upset at somebody or something that someone has done. This fact necessitates a societal response (couples therapy, family therapy, co-counselling of business partners, etc.) The discipline has created a plethora of anger management strategies and packaged interventions

that are accessible in carefully curated bundles adapted to a wide range of social circumstances. These include preschool, elementary school, adolescent, and adult versions.

These results contribute significantly to our knowledge of complex dynamical psychological processes of trait anger, aggressiveness and aggression-based schadenfreude and life satisfaction.

6. Discussion

When evaluating the outcomes of this study, certain limitations should be considered. Firstly, all psychological assessments were self-reported, which might have influenced this study's validity. Other approaches, such as evaluating schadenfreude using a valid psychological measure and employing other-report measures to eliminate any common method bias, might be used in future investigations. Second, because the study was cross-sectional, causal conclusions were not possible (West, 2011). Future research should employ longitudinal designs to investigate changes in key components and establish temporal order.

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