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# Laughing Together: A Social Perspective on the Relationship between Personality, Humor, and Well-Being

Bachelor's thesis in Psychology

Supervisor: Wei Wang

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Norwegian University of Science and Technology  
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Candidate number: 10002

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Project leader: Wei Wang

## **Preface**

I would like to express my sincere gratitude to the student assistant Vegard Litlabø for making the inclusion of social relations to the research question possible. His contribution included making his *Social Relations Frequency Scale* available for this study, in addition to providing helpful insights and discussion. I would also like to thank my academic advisor Håvard Rudi Karlsen for final evaluations and guidance in the late stages of writing this thesis. Thanks to the project leader Wei Wang for the preparations of this project including the approval from NSD. Further, I would like to thank the students in the bachelor group for establishing helpful discussion and communal support. Special thanks are directed towards the student with the similar research question, where close discussion and review of relevant literature has been of great value.

## Abstract

Humor styles have been associated with personality, however, no study has examined the influence of frequency of social interactions on this relationship. The present study therefore aimed to examine this influence through how frequency of social interactions, and humor styles regarded as positive or negative, both are connected to well-being. In an online questionnaire directed towards a Norwegian sample, the Humor Styles Questionnaire (Martin et al., 2003), the shortened form of Zuckerman-Kuhlman-Aluja Personality Questionnaire (Aluja et al., 2018) and Litlabø's unpublished Social Relations Frequency Scale were answered. Correlational analyses mostly validated previous empirical findings between personality and humor, although the use of an unorthodox personality measure did show some differences. Regression-based moderator analyses showed that the frequency of social interactions did not moderate how personality predicted humor. The categorization of humor as positive or negative is discussed through the importance of context. Additionally, it is discussed how both quantity **and** quality of social relations is necessary to examine the influence of social relations on humor and personality through well-being. Implications for further research recommend examining humor multi-dimensionally for more precise associations towards personality and well-being.

## 1. Introduction

Personality models based on "The Big Five" have a well-established theoretical and empirical background (Costa & McCrae, 1992; DeYoung et al., 2007; Fleeson & Gallagher, 2009; Saulsman & Page, 2004; Van der Linden et al., 2010), in which personality traits encompass a range of behaviors and cognitive mechanisms that constitute our personality. In APA's online version of *Dictionary of Psychology*, personality is defined as "The enduring configuration of characteristics and behavior that comprises an individual's unique adjustment to life, including major traits, interests, drives, values, self-concept, abilities, and emotional patterns.". However, humor is often regarded as an important part of one's own personality, primarily due to how individuals express their personalities through humor. Nevertheless, humor is not extensively included within the personality taxonomies such as "The Big Five." On the other hand, humor or "a sense of humor" is commonly referred to as a distinct stable personality trait that falls outside the scope of most personality models, thus it can also be categorized as a separate variable for individual differences (Martin et al., 2003). Considering the similarities between humor and personality, it is therefore not surprising that empirical studies have identified various associations between personality and what is referred to as "humor styles" (Martin et al., 2003; Mendiburo-Seguel et al., 2015; Plessen et al., 2020). In an attempt to explain the relationship between personality and humor, this study proposes that the relationship may be contextualized through the influence of social relations and how these constructs relate to well-being.

In the article by Martin et al. (2003) a questionnaire called the *Humor Styles Questionnaire* (HSQ) was developed to measure four different styles of humor, which were then related to well-being and mental health in general. The questionnaire has since been regarded as a valid measure of humor itself, but especially as a valid measure of differentiated humor styles, even in multiple countries (Plessen et al., 2020; Schermer et al., 2019). These

humor styles are largely based on social situations and how individuals behave in- and relate to these situations. However, this does not imply that humor styles cannot manifest or apply outside social situations, but rather that the humor styles in the HSQ are more oriented towards (though not limited to) social contexts in which individuals can interpret and respond to others' humor, as well as receive feedback and responses to their own humor. A common aspect in assessing both personality and humor is that these traits and styles are directly dependent on social interactions, situations, and relationships, where Martin and Ford (2018) additionally recognize humor fundamentally as a social phenomenon. The social aspect has previously been investigated, both in Martin et al. (2003) and in Dyck and Holtzman (2013) through social intimacy and social support, where the importance of social relations was established in both studies. The social aspect of the relationship between personality and humor is therefore of utmost relevance.

Based on how this connection between humor and personality manifests through social situations, this study will further explore the general relationship between humor and personality, but more importantly, examine how the social aspects influence this relationship through social relations.

### ***1.1 Humor***

Humor is without question a complex construct, whether it's regarded as an evolutionary adaption (Gervais & Wilson, 2005; Weisfeld, 1993), cognitive mechanism (Kuiper et al. 1993; Kuiper & Martin, 1998b; Samson et al., 2007), emotion-regulatory strategy (Kuiper et al., 1993; Samson & Gross, 2010), or more relevant to this study, as a construct related to psychological well-being (Dyck & Holtzman, 2013; Jovanovic, 2011; Leist & Müller, 2012; Martin et al., 2003) and social relationships (Cann et al., 2009; Dyck & Holtzman, 2013; Martin et al., 2003). In context of this study, humor is defined as "(...) a multifaceted term that represents anything that people say or do that others perceive as funny

and tends to make them laugh (...)” (Martin & Ford, 2018, p. 3). As mentioned in the introduction, humor can be regarded as a fundamentally social phenomenon, illustrated further through how humor can be argued to occur in nearly every interpersonal relationship, as proposed by Martin & Ford (2018, p. 3). A core aspect of humor as a social phenomenon is how it is communicative in nature, illustrated through people’s response to humor through smiling and laughing (Martin & Ford, 2018, p. 3). Laughter specifically have shown itself as a significant moderator in the relationships between stressful life events and negative affect, in which the frequency of laughter reduced how strongly people were negatively affected by these stressful events (Kuiper & Martin, 1998a).

Further in terms of well-being and mental health, psychological mechanisms such as optimism and hope have been identified as essential parts of a “sense of humor” (Kuiper et al. 1993; Kuiper & Martin, 1998b), suggesting that the positive cognitive appraisals innate in optimism and hope are necessary for the production and comprehension of humor. Meta-analytical findings have further established how optimism and hope are uniquely distinguishable from one another and from personality in general, as well as identifying their positive correlates to physiological and psychological well-being (Alarcon et al., 2013). Given the connection between humor and well-being, and how these differ from personality, but are equally dependent on a social context, this study will try to examine how social relations might further explain and/or reflect the relationship between personality and humor, discussing additionally how these relate to well-being and mental health in general.

### **The Humor Style Questionnaire**

The HSQ mentioned earlier, developed by Martin et al. (2003), is a multidimensional measure of humor that have shown substantial evidence of validity (Martin et al., 2003; Plessen et al., 2020; Schermer et al., 2019), and is included in the current study to measure humor. The HSQ was developed to differentiate between different forms of humor to better

identify what types of humor that were related to well-being, in terms of what types of humor that are beneficial or potentially detrimental. The questionnaire therefore goes beyond what has previously been researched regarding humor or “sense of humor” as a singular construct. Through various analyses, Martin et al. (2003) identified four different “styles” of humor: affiliative, self-enhancing, aggressive, and self-defeating.

The four humor styles are differentiated along two categories. First, between a) to enhance the self, or b) to enhance one’s relationships with others. Second, between a) humor as relatively benign and benevolent, or b) humor as potentially detrimental or injurious, either towards the self or towards one’s relationships with others (Martin et al., 2003, pp. 52-53). The first distinction encompasses how humor is used in relation to the self or to others, while the second distinction is a categorization that regards humor as either positive or negative. The article still briefly mentions that the distinction between positive and negative humor is one of degree, and not a dichotomy, i.e., that affiliative humor may involve uses of humor that involves mildly aggressive elements such as “gentle teasing” or “playfully poking fun”. Still, the findings of Martin et al. (2003) and other studies that have adopted the HSQ, have shown that the positive humor styles on a general basis have more benefits towards psychological well-being and life satisfaction (Schneider et al., 2018). The distinction between different styles of humor has therefore identified more precise measures of humor regarding their positive or negative qualities compared to earlier studies that yet had distinguished humor into humor styles such as Kuiper et al. (1993) and Kuiper and Martin (1998b). The positive and negative categorization of humor will be further discussed in the discussion.

The different styles of humor will now be presented based on how they are described in Martin et al. (2003), both in terms of how they are generally described and in terms of how they are categorized regarding the above-mentioned distinctions. Affiliative humor is vaguely described in terms of one’s tendency to “say funny things, tell jokes, and to engage in

spontaneous witty banter to amuse others, to facilitate relationships, and to reduce interpersonal tensions” (Martin et al., 2003, p. 53). Affiliative humor is therefore categorized as enhancing one’s relationships with others and as relatively benign and benevolent, posing it as a primarily interpersonal and positive type of humor.

Self-enhancing humor is in the same positive manner described as a more coping form of humor that focuses on a general positive outlook on life, but specifically in using humor to maintain a positive perspective in adverse situations. Self-enhancing humor therefore functions as a coping strategy and is mainly a type of humor that focuses on enhancing the self, in the shape of an intrapersonal and positive humor style.

Aggressive humor on the other hand is in general related to a use of humor without regard for its potential impact on others, mainly referring to a potential negative impact. Examples of aggressive humor can therefore be sarcasm, ridicule, teasing and other forms of humor that may be considered offensive such as sexism and racism, with the underlying intent being to harm or expose other people. As mentioned earlier, the style-distinctions does not impose that these intents and motives for aggressive humor are exclusively relevant, but rather that the questionnaire aims to identify types of aggressive humor that aligns with the harmful intents and motives. Anyhow, aggressive humor is still a humor style that focuses on enhancing the self, but at the expense of others, and is mainly an interpersonal and negative type of humor.

Self-defeating humor is in the same vein a negatively charged type of humor that primarily focuses on amusing others by saying or doing funny things, but at the expense of oneself. Posing oneself as “the butt of the joke” is therefore a common description of individuals that tend to use this type of humor. Self-defeating humor is therefore primarily focused on enhancing one’s relationship to others, but at the expense of oneself, and categorized as a primarily interpersonal and negative type of humor.

It's worth mentioning that the described humor styles can all be ambiguous in terms of being intra- or interpersonal depending on context (even mentioned in the article itself; Martin et al., 2003). However, the self-enhancing humor style is less relevant in social contexts compared to the other styles of humor, being mainly used in an intrapersonal fashion, and therefore has received less focus in this study.

### **Positive and negative humor**

The distinction between humor as relatively benign and benevolent, and humor as potentially injurious or detrimental, have been empirically shown to be valid in terms of how they affect individuals' life-satisfaction, happiness, optimism, various measures of well-being and mental health in general (Dyck & Holtzman, 2013; Edwards & Martin., 2014; Ford et al., 2016; Jovanovic, 2011; Leist & Müller, 2012; Martin et al., 2003; Schneider et al., 2018), in addition to have associations towards depression factors (Kfrerer, 2018; Rnic et al., 2016), and implications towards social relationships (Cann et al., 2009). Although Martin et al. (2003) did not find any correlation between aggressive humor and depression, these studies show the implications of differential humor styles that are regarded as positive or negative in a range of different measures, and further enhances the humor styles positions as positive and negative in use.

Challenging the vast empirical findings between humor and general well-being, Ruch & Heintz (2013, 2017) show evidence of low incremental validity of humor styles in predicting psychological well-being. Specifically, the results of the 2013 study showed that the HSQ contributed little in predicting psychological well-being when controlling for context and personality, and that humor components of HSQ and other measures of humor correlated highly with each other, where none of the humor components were innately detrimental or maladaptive towards psychological well-being. In the 2017 study, results showed that the construct validity of the humor styles were limited, and that the humor styles (except

affiliative humor) were primarily determined by context, with self-defeating being purely contextually determined. The authors of this study, questions the HSQ as a measure of personality in general, and have themselves proposed a total of nine humor styles to better contextualize different types of humor and give a more nuanced view of humor overall (Heintz & Ruch, 2019). Compared to the vast majority of humor-research, Ruch and Heintz have less empirical support for their comparative findings, but their views are not necessarily diminishable by this account.

## ***1.2 Personality***

As mentioned in the introduction, humor have close relations to personality, and even so have shown multiple associations between humor styles in the HSQ and personality traits rooted in Costa and McCrae's well established FFM (Martin et al., 2003; Mendiburo-Seguel et al., 2015; Plessen et al., 2020). The personality measure used in this study however, differs from most empirical findings made in humor-research that have mainly adopted the *Revised NEO Personality Inventory* (NEO-PI-R). This study uses an alternative "Five Factor Model" (FFM) called *Zuckerman-Kuhlman-Aluja Personality Questionnaire (shortened form)* (ZKA-PQ/SF), which is a shortened form of the ZKA-PQ developed by Aluja et al. (2010). This FFM has its origin from Zuckerman et al. (1993)'s *Zuckerman-Kuhlman Personality Questionnaire* (ZKPQ) which was proposed as an alternative to the well-established FFM from Costa and McCrae (1992). The reason for the development of the original alternative model from 1993, is rooted in the authors' perceived need for a personality model that sufficiently captured the construct of impulsivity, and that accounted more for the interaction between complex neuro-psychological systems and behavior (Zuckerman, 1991; Zuckerman et al., 1993).

The personality traits used in the ZKA-PQ/SF is based on the traits described in Zuckerman et al. (1993) of the ZKPQ. Relevant to this study, extraversion (based on the ZK-

Sociability) is described as concerning one's number of friends, and the time spent with them, outgoingness at parties, and a general preference of being around other people in favor of solitary activities. Neuroticism is described as concerning "emotional upset, tension, worry, fearfulness, obsessive indecision, lack of self-confidence, and sensitivity to criticism." (Zuckerman et al. 1993, p. 759). Aggressiveness is described as concerning verbal aggression, rude and antisocial behavior, vengefulness, spitefulness, and admittance of a quick temper and impatience towards others.

Both the ZKA-PQ and the ZKA-PQ/SF has been validated in several cultures in different languages (Rossier et al., 2016; Aluja et al., 2020), where ZKA-PQ has been compared to the NEO-PI-R for trait correlations and internal validity measures (Garcia et al., 2012). The comparison showed that the two models are generally comparable in terms of tapping into the same constructs of personality. Extraversion and neuroticism specifically showed few differences, and ZKA-Aggressiveness showed a strong negative correlation with NEO-Agreeableness. This comparison and others, including the articles from the creators themselves (Aluja et al., 2010, 2013), suggest that the empirical findings between personality and humor that is based upon NEO-PI-R can be appropriately compared to our study which use the ZKA-PQ/SF.

Having established how NEO-PI-R and ZKA-PQ/SF are comparable measures of personality, various findings of correlates between personality traits and humor styles will be presented. In the original article from Martin et al. (2003), extraversion showed moderate to strong positive associations with the positive humor styles (affiliative and self-enhancing). Beyond the positive styles of humor, neuroticism showed positive associations with negative styles of humor (aggressive and self-defeating), with self-defeating humor being the strongest correlate (Martin et al, 2003). Additionally, agreeableness (comparably a trait-reversal of ZKA-Aggressiveness) showed negative correlations with negative styles of humor, where

aggressive humor was the strongest correlate (Martin et al, 2003).

Meta studies confirm the findings above, showing that the positive styles of humor are positively associated with extraversion, and that the negative styles of humor were positively associated with neuroticism and negatively associated with agreeableness (Mendiburo-Seguel et al., 2015; Plessen et al., 2020). A more recent study, which also used the alternative FFM (ZKA-PQ/SF), showed consistent findings in that aggressive humor was positively correlated with aggressiveness, but inconsistent in that it was nonsignificant towards neuroticism, although it was still strongly associated with self-defeating humor (Čekrlija et al., 2022). This study therefore expects similar findings as Čekrlija et al. (2022), by the account that the same measure of personality is adopted. Correlational analysis of extraversion did however show corresponding results with previous meta-analytical findings through its positive association with both positive humor styles (Čekrlija et al., 2022).

### ***1.3 The role of social relations***

This study examines what role social relations plays in how personality relates to humor. Firstly, this is because both personality and humor in great fashion manifests themselves in social situations, but more directly through how social relations relate to well-being (Cacioppo & Cacioppo, 2014; Shankar et al., 2013), and through well-being potentially relates to positive and negative humor styles. Contextualizing how social relations plays a part in how personality relates to humor, it will now be presented different empirical findings that support how the frequency of one's social interactions may influence this relationship. Firstly, it is relevant to mention that previous humor-research has primarily included quality measures of one's social relations, such as social support (Dyck & Holtzman, 2013; Martin et al., 2003) and (romantic)relationship satisfaction (Cann et al., 2009). In this current study, however, the focus is mainly directed towards the quantity of social interactions because it can be argued that they have been neglected in humor-research. Nevertheless, this examination will not

come without acknowledging how the relevance of frequency of social interactions is made through quality of social relations, in line with Fiorillo and Sabitani (2011) that show how quantity is relevant, but that this reflects a stronger predictor, namely quality.

Primarily, the connection between social interactions, personality and humor is made based on the assumption that an increase in social interaction will likely increase the probability of receiving qualitative measures of social relations such as positive appraisal and support, as mentioned in Pinquart and Sörensen (2000, p. 189). Beyond this assumption, the frequency of social interaction is in this study seen as an essential reflection of the total quality of one's social relationships, since individuals themselves may not be the best at estimating their own quality of their social relations in terms of overall well-being measures. In this sense, some individuals may not report feelings of loneliness, but may still be negatively affected by the lack of social interaction. This argument is supported by the findings of Macdonald et al. (2021) which shows how frequency of social interactions in adults matters towards general well-being and daily well-being, in face-to-face contact and digital contact respectively. A single study by Nezlek et al. (2002) also showed that more frequent interaction over a 2-week period was associated with higher life-satisfaction and lower levels of loneliness. Core aspects of the findings of Macdonald et al. (2021) and Nezlek (2002) is in part how frequent social interaction is important towards well-being, further suggesting the importance of not neglecting the quantity of social interactions.

Earlier in the introduction it was mentioned that laughter plays a key role in the social aspects of humor (Martin & Ford, 2018). In relation to frequency of social interaction and well-being, Kuiper and Martin (1998a) have shown how the frequency of laughter decreases the overall negative affect inflicted by stressful life events, indicating its protective quality towards mental health and well-being. Furthermore, this may indicate that an increased frequency of social interactions increases the probability of laughter occurring, and therefore

give further indications of the beneficial effects frequency of social interactions may have towards well-being and in turn the use of positive and negative humor styles.

### **Social Relations Frequency Scale (SRFS)**

In measuring the frequency of social interaction, this study adopted Litlabø's unpublished *Social Relations Frequency Scale* (SRFS). This questionnaire was developed to examine the relationship between frequency of various social interactions and well-being. The scale items are built up of 6 questions that were inspired by the social-relational factors of the *Living-conditions-survey* regarding social contact by Statistics of Norway in 2015 (Isungset & Lunde, 2016). The questions contained frequency measures of digital contact with friends, meaningful conversations with near relations, family contact, contact regarding personal issues, face-to-face contact with good friends, and of others showing interest. Some of these measures could be categorized as being linked to quality of social relations, but they are still operationalized through frequency.

### **Contextualizing personality and social relations towards positive and negative humor**

The effect that, an increase in social interactions has associations with increased overall well-being, may have the same effect towards humor in the sense that an increase in social interactions may be associated with a better adaptation of humor as an adaptive strategy towards well-being. This suggests that an increase or decrease in social interactions may have moderating effects towards how personality predicts humor styles. This assumes that the positive and negative qualities of humor styles are regarded as truly positive and negative towards overall well-being, which has previously been mentioned to have unconcise findings. Social relations are still proposed in this study to have a relevant role in the relationship between personality, humor, and well-being.

As extraversion generally is described in Zuckerman et al. (1993), the trait refers to

individuals scoring high on this trait as being attracted to social situations and to possess different predispositions for socializing and social contexts in general. These predispositions are especially relevant in terms of the sub-facets of extraversion in ZKA-PQ/SF: socialization, positive emotion, and exhibitionism (Aluja et al., 2010). These predispositions are therefore additionally relevant in terms of how they manifest in social situations and are further relevant towards how they manifest in humor styles. This relevancy is supported by Ford et al. (2016) which showed that people high in extraversion were happier because they engage in positive humor in daily life. The link between extraversion and positive humor is therefore empirically supported and may be further contextualized through the interaction between extraversion and social relations. From this thought of reasoning, an individual scoring high on extraversion, but who has few social interactions may be affected negatively from this, which may further result in implications for their frequency of using positive humor in daily life.

In the same fashion that extraversion have predispositions for positive humor styles and have shown empirical support of its relation to positive humor styles, neuroticism has shown strong associations with the negative humor style of self-defeating humor (Čekrlija et al., 2022; Martin et al., 2003; Mendiburo-Seguel et al., 2015; Plessen et al., 2020). By the same reasoning of how social relations may influence how extraversion predicts affiliative humor, an increase in social interactions may have beneficial effects towards individuals, which may result in less use of negative humor such as self-defeating humor. This argument is further supported by Han et al. (2021) which shows how neuroticism mediated the relationship between perceived social support and life satisfaction. Neuroticism was further linked to perceived social support, and how one's subjective social status moderate this link (Han et al., 2021), where an increase in number of social interactions may contribute to boosting one's subjective social status and increasing mental health through life satisfaction.

#### ***1.4 Current study***

Building upon the concepts and empirical findings presented in the introduction, this study aims to examine two main hypotheses. Firstly, it's hypothesized that negative humor styles will be differentially correlated with the personality traits aggressiveness and neuroticism. Specifically, this study predicts in line with previous empirical findings that aggressiveness and neuroticism will be positively correlated with negative humor styles. The correlation between aggressive humor and neuroticism is however an exception from this, where it is predicted to be found a nonsignificant correlation. Secondly, it is hypothesized that social relations will have interactional effects on how personality predicts humor. Specifically, this study predicts that high SRFS will reduce how strongly neuroticism predicts self-defeating humor. Additionally, this study predicts that low SRFS will reduce how strongly extraversion predicts affiliative humor. The underlying general assumption of this general hypothesis is, as mentioned earlier, that frequency of social interaction will influence one's tendency for positive and negative humor through its connection to well-being.

This study has two main goals: 1) examining the relationship between personality and humor, and 2) examining how social relations influence the relationship between personality and humor, specifically toward humor styles that are primarily interpersonal. Firstly, the correlational hypothesis was made to further examine the personality correlates to negative humor styles, and specifically up against an unorthodox personality measure such as ZKA-PQ/SF. Secondly, the interactional hypothesis was made to examine how social relations may contribute to explaining the rather unconcise empirical findings between humor styles and general well-being. Additionally, it's examined if social relations have implications for positive humor styles as well as negative ones, given a general interactional effect between personality and social relations. The current study's hypotheses and their belonging predictions are therefore as follows:

**Hypothesis 1:** Negative humor styles will be differentially correlated with the personality traits aggressiveness and neuroticism.

**Prediction 1a:** Aggressive humor will be positively correlated with aggressiveness, but nonsignificant towards neuroticism.

**Prediction 1b:** Self-defeating humor will be positively correlated with both aggressiveness and neuroticism.

**Hypothesis 2:** Social relations will have interactional effects on how personality predicts humor.

**Prediction 2a:** High SRFS will reduce the predicative effect of neuroticism on self-defeating humor.

**Prediction 2b:** Low SRFS will reduce the predicative effect of extraversion on affiliative humor.

## **2. Method**

### ***2.1 Participants***

The participants consisted of 420 people, where one participant had given all blank answers and three participants were under the age of 18. These four participants, including the 227 participants that were not students, were excluded from the study-sample. The exclusion of non-students was based on how a substantial percentile of the participants (45%) were students, where the remainder of the participants were deemed too demographically inconsistent to be appropriately representative of the general population. A delimitation was therefore made on the basis of generalizing the findings only towards Norwegian students, which will be further discussed in the limitations. Of the remaining 189 students, 72 of them were male (38%) and 117 of them were female (62%), consisting of predominantly

Norwegian citizens (98%). Ages ranged from 18-55 years (men:  $M = 23.59$ ,  $SD = 3.40$ ; women:  $M = 23.61$ ,  $SD = 4.37$ ), although 97% of the students were 27 years of age or younger.

## ***2.2 Procedure***

A questionnaire was distributed to potential participants in February of 2023, consisting of questionnaires regarding personality, humor, passion, and social relations, in addition to multiple control variables such as age, gender, income, etc. The project was presented as a study about personality, humor and interests where the potential participants were informed that the study was completely anonymous. Participants were recruited through a convenience-sample, being informed of the study mainly through social media platforms. The participants filled out the questionnaire online through nettskjema.no, which was approved by NSD before they were handed out.

## ***2.3 Instruments***

### **HSQ – Humor**

Humor was measured using Martin et al. (2003)'s Humor Style Questionnaire (HSQ) that identify one's tendency to use the four different humor styles mentioned in the introduction. The questionnaire consisted of a total of 32 items, structured through a 7-point Likert scale where participants would rate their agreement with: 1) Totally agree, 2) Moderately Disagree, 3) Slightly Disagree, 4) Neither Agree nor Disagree, 5) Slightly Agree, 6) Moderately Agree, and 7) Totally Agree. Examples of these statements were among others, "If someone makes a mistake, I will often tease them about it." (Aggressive humor), "I rarely make other people laugh by telling funny stories about myself." (Affiliative humor), and "I let people laugh at me or make fun at my expense more than I should." (Self-defeating).

In the original article where HSQ was developed, internal consistencies measured with

Cronbach's alpha were moderately strong through: affiliative humor (.80), self-enhancing (.81), aggressive humor (.77), and self-defeating humor (.80). In this study's sample, the internal consistencies showed equally strong with affiliative humor (.83), self-enhancing humor (.84) and self-defeating humor (.81), with the exception being aggressive humor (.70) suffering a slight reduction, although still acceptable.

### **ZKA-PQ/SF – Personality**

Personality was measured using the shortened form of Zuckerman-Kuhlman-Aluja Personality Questionnaire (ZKA-PQ/SF) that included the same five traits as the original questionnaire (and equally consisting of four facets for each trait), although the total number of items were reduced from 200 to 80 in the shortened form (Aluja et al., 2018). The original personality questionnaire was developed to contain personality traits that represented more biologically rooted descriptions, but that was still based on the Big Five traits. The shortened form was therefore developed to be a more accessible version of (but still equal to) the original questionnaire. ZKA-PQ/SF was structured according to a 4-point Likert-scale, where participants would answer how they agreed to the statements as: 1) Disagree Strongly, 2) Disagree Somewhat, 3) Agree Somewhat, and 4) Agree Strongly. Examples of these statements would be: "I am usually very happy" (EX1), "I am easily angered" (AG4), or "I feel helpless if there is no one to advise me" (NE3).

The traits' internal consistency has previously been analyzed within 18 different cultures using Cronbach's alpha and has shown rather strong consistencies in: aggressiveness (.85), activity (.79), extraversion (.81), sensation seeking (.77), and neuroticism (.86) (Aluja et al., 2020). In this current study's sample, the internal consistencies were also measured using Cronbach's alpha, showing a minor reduction in internal consistency compared to the article from Aluja et al. (2020), but still acceptable within: aggressiveness (.74), activity (.69),

extraversion (.76), and neuroticism (.80). The only exception was sensation seeking which showed a moderate-to-low internal consistency (.57).

### **SRFS – Social relations**

Social relations were measured using Litlabø's SRFS, consisting of six items that identify the frequency of one's social interactions. The scale has not been used in any previous studies and was developed for the purpose of examining the relationship between social relations and well-being based on frequency. All the items were therefore made up of questions asking how often one has had different types of social interactions, where three of them were more directed towards more meaningful interactions or interactions where one's own interpretation of them is key, i.e. "How often do you have contact with people you can speak about personal issues with?" or "How often does others show interest in what you do?". The other items were consisting of questions that were less contingent on a deeper relationship, i.e. "How often do you have contact with good friends via telephone, sms, e-mail, messages on social media or similar?".

No tests of internal consistency had previously been made, so this study was one of the first to examine it. Consisting of 6 items, measured through Cronbach's alpha, the SRFS showed a moderate-to-low internal consistency of  $\alpha = .68$ . None of the items showed a substantial increase in the total internal consistency had they been removed.

### ***2.4 Statistical analyses***

To examine the relationship between personality, humor and social relations, correlational analyses and regression-based moderator analyses were chosen. All analyses were performed in SPSS 29. Failing to meet the assumptions for running statistical analyses have critical consequences for the tests estimates and generalizability. A non-parametric correlational analysis (Spearman's rho) was therefore chosen because of study-variables that

were not normally distributed. These variables included: Self-Enhancing humor, Affiliative humor, Extraversion, and SRFS. These conclusions were made based on both statistical analyses (Kolmogorov-Smirnov & Shapiro-Wilk) and graphical analyses. Regression-based moderator analyses (using PROCESS) were chosen to examine the potential interactional effects social relations could have on the relationship between personality and humor. In the moderation analyses, personality traits were the independent variables and humor styles were the dependent variables. Normality of residuals were assessed graphically and concluded as acceptably meeting the assumptions for running regression analyses.

### **3. Results**

**Prediction 1a: Aggressive humor will be positively correlated with aggressiveness, but nonsignificant towards neuroticism.**

A correlational analysis (see table 1) showed a significant moderate positive correlation between aggressive humor and aggressiveness,  $\rho = .26, p < .001$ , but a non-significant mild negative correlation was found between aggressive humor and neuroticism,  $\rho = -.13, p < .069$ .

**Prediction 1b: Self-defeating humor will be positively correlated with aggressiveness and neuroticism.**

A correlational analysis (see table 1) between Self-Defeating humor and aggressiveness showed a significant moderate positive correlation,  $\rho = .23, p = .002$ . A significant and stronger positive correlation was additionally found between self-defeating humor and neuroticism,  $\rho = .40, p < .001$ , showing a moderate-to-strong effect.

**Prediction 2a: Neuroticism will positively predict self-defeating humor, where high SRFS will reduce this effect.**

To investigate if SRFS moderated the effect between neuroticism and self-defeating humor, a regression-based moderator analysis was performed (see table 2). The results showed that neuroticism positively predicted self-defeating humor,  $b = 0.91$ ,  $\beta = 0.46$ , 95% CI [0.63, 1.19],  $p < .001$ , where the interaction effect between neuroticism and SRFS was found to be statistically nonsignificant,  $b = -0.33$ ,  $\beta = -0.07$ , 95% CI [-0.94, 0.29],  $p = .297$ .

**Prediction 2b: Extraversion will positively predict affiliative humor, where low SRFS will reduce this effect.**

To investigate if SRFS moderated the effect between extraversion and affiliative humor, a regression-based moderator analysis was also performed (see table 3). Extraversion positively predicted affiliative humor,  $b = 1.12$ ,  $\beta = 0.58$ , 95% CI [0.86, 1.38],  $p < .001$ , where the interaction effect between extraversion and SRFS was found to be statistically nonsignificant,  $b = -0.26$ ,  $\beta = -0.07$ , 95% CI [-0.70, 0.18],  $p = .251$ .

**Table 1.** Descriptives and Spearman's correlations for study variables (N = 189)

Variables	<i>M</i>	<i>SD</i>	1.	2.	3.	4.	5.	6.	7.	8.
1. AG	2.03	0.44	-							
2. EX	3.20	0.47	-.09	-						
3. NE	2.55	0.53	.37**	-.29**	-					
4. AFH	5.69	0.90	.06	.65**	-.17*	-				
5. SEH	4.55	1.12	-.12	.47**	-.35**	.51**	-			
6. AGH	3.34	0.90	.26**	.14	-.13	.29**	.26**	-		
7. SDH	3.93	1.07	.23*	-.01	.40**	.19*	.08	.16*	-	
8. SRFS	4.22	0.48	-.01	.53**	-.19*	.34**	.18*	.14	-.03	-

Note: \* $p < .05$ , \*\* $p < .001$ .

AG = Aggressiveness, EX = Extraversion, NE = Neuroticism, AFH = Affiliative humor; SHE = Self-enhancing humor, AGH = Aggressive humor; SDH = Self-defeating humor; SRFS = Social Relation Frequency Scale.

**Table 2.** Regression analysis for predicting Self-Defeating humor with a moderator variable (N = 187)

Model	<i>b</i>	<i>SE b</i>	$\beta$	95% CI		<i>p</i>
				<i>LL</i>	<i>UL</i>	
Model 1						<.001
Neuroticism	0.86	0.14	0.42	0.59	1.13	<.001
Model 2						<.001
Neuroticism	0.89	0.14	0.43	0.61	1.16	<.001
SRFS	0.16	0.15	0.07	-0.14	0.46	.299
Model 3						<.001
Neuroticism	0.91	0.14	0.46	0.63	1.19	<.001
SRFS	0.16	0.15	0.08	-0.14	0.46	.289
Neuroticism×SRFS	-0.33	0.31	-0.07	-0.94	0.29	.297

Note: CI = confidence interval; *LL* = lower limit; *UL* = upper limit.

**Table 3.** Regression analysis for predicting Affiliative humor with a moderator variable (N = 187)

Model	<i>b</i>	<i>SE b</i>	$\beta$	95% CI		<i>p</i>
				<i>LL</i>	<i>UL</i>	
Model 1						<.001
Extraversion	1.20	0.11	0.63	0.99	1.42	<.001
Model 2						<.001
Extraversion	1.13	0.13	0.59	0.88	1.39	<.001
SRFS	0.13	0.13	0.07	-0.12	0.38	.300
Model 3						<.001
Extraversion	1.12	0.13	0.58	0.86	1.38	<.001
SRFS	0.10	0.13	0.05	-0.16	0.35	.450
Extraversion×SRFS	-0.26	0.22	-0.07	-0.70	0.18	.251

Note: CI = confidence interval; *LL* = lower limit; *UL* = upper limit.

## 4. Discussion

### 4.1 *Discussing core findings*

The results of this study showed that the correlational associations between personality and humor were as predicted. In line with prediction 1a) aggressive humor showed a significant positive correlation towards aggressiveness, and a nonsignificant correlation towards neuroticism. In line with prediction 1b) self-defeating humor showed a significant positive correlation towards both aggressiveness and neuroticism, with neuroticism unsurprisingly showing the strongest correlation. For the moderation analyses, prediction 2a) turned out to be false, where the results showed that neuroticism significantly and positively predicted self-defeating humor, but that SRFS did not moderate the relationship, indicated by a nonsignificant interaction between neuroticism and SRFS. The same conclusion was made for prediction 2b) where the results also showed that extraversion significantly and positively predicted affiliative humor, but that SRFS did not moderate the relationship.

The moderation analyses showed how the frequency of social interaction does not have any interactional effect on neither neuroticism nor extraversion in our sample, regarding how their personality is related to their tendency for humor styles. The hypotheses have an underlying assumption that an increased number of social interactions will reduce the probability of using negative humor styles such as self-defeating humor, but also an assumption that the lack of social interaction will decrease the probability of using positive humor styles such as affiliative humor. These assumptions build upon the posed connection between the positive and negative humor styles and well-being, in terms of how social relations also relate to well-being. These nonsignificant findings may be explained by the irrelevance of social relations regarding positive/negative humor styles, but they may also be explained by how the positive and negative humor styles may not necessarily be purely adaptive and maladaptive towards well-being. By this reasoning, the connection between

social relations and positive/negative humor styles through well-being therefore diminishes, thereby also diminishing the effect social relations have on the predicative effect of personality towards humor.

Categorizing humor styles as either positive or negative may not be as simplistic in different contexts and populations, as these hypotheses may imply. Exemplified, aggressive humor can be viewed as neutral, or even positive, regarding different contexts and groups of people, such as the original article from Martin et al. (2003) suggests. As mentioned in the introduction, affiliative humor such as “gentle teasing” and “playfully poking fun” is presented in the article as mildly aggressive but is also specified to not be the intended measurement of aggressive humor in the HSQ. This may not be as clearly presented in the actual questions directed towards aggressive humor in the questionnaire, and therefore presents more leeway for ambiguity in HSQ regarding what is considered affiliative or aggressive. This is further reflected by the positive association between aggressive humor and affiliative humor in our sample (see table 1).

The argument of ambiguity is supported by Stanley et al. (2014) where it was shown how young adults endorsed a more aggressive humor style compared to middle-aged and older adults. This endorsement of aggressive humor mediated age differences in how socially appropriate the participants rated the aggressive humor, with cohort differences also being discussed to have an impact (Stanley et al., 2014). Ambiguity of what is considered aggressive humor within the HSQ, or what is considered as positive or negative humor in general, may therefore be especially relevant for younger people, such as students used in this study. In this context, aggressive humor such as “teasing” or “banter” may be a more common occurrence, and even in some cases categorized as affiliative in favor of aggressive. This ambiguity in what is socially considered as a positive or negative humor style may therefore not be entirely represented in the HSQ and may further result in equally ambiguous responses from

participants.

Regarding self-defeating humor, this humor style has more established associations with detrimental factors such as depression (Rnic et al., 2016), lower happiness (Ford et al., 2016), and well-being in general (Dyck & Holtzman, 2013). Still, studies have shown how these effects likely are made up of other mediating factors from its variance being explained by primarily contextual factors (Ruch & Heintz, 2017). A study by the same authors even uncovered the adaptive side of self-defeating humor, where self-defeating humor showed indications of having positive effects towards an individual through higher self-esteem, improvement of interpersonal relationships and more facial displays of positive emotions (Heintz & Ruch, 2019). Beyond being influenced by other factors, different context provides different uses and motives towards self-defeating humor that may not be detrimental towards well-being at all. This study does however neglect the longitudinal effects of excessive use of self-defeating humor, even though these are likely explained by other mediating factors, and therefore cannot alone disparage the empirical findings relating self-defeating humor to lower well-being.

Negative and positive humor styles show diversity in their application and effect, suggesting that even negative humor styles can be regarded as positive depending on cohort differences and other contextual factors. Substantial evidence show that this is most likely not the case in most instances, where frequency of use also show difference in effect. As a long-term strategy for communication, the negative humor styles are conceptualized as less effective, as mentioned in the article from Cann et al. (2009). Further evidence even shows that there is a positive relationship between the negative humor styles, particularly self-defeating, and depression (Kfrerer, 2018). Rnic et al. (2016) further show that the connection between humor styles and depression may be due to cognitive distortions that negatively influence our biases and appraisals, in line with the findings of Kuiper et al. (1993) where

negative humor showed a higher tendency for negative appraisals. Rnic et al. (2016) even argues that distorted negative thinking may interfere with an individual's ability to adopt a humorous and cheerful outlook on life, further explaining the correlational relationships in previous empirical findings. Nevertheless, the use of negative humor is here not regarded as purely negative, since contextual determinants have shown substantial effects, but also because as long as negative humor induces laughter it still has protective qualities towards reducing negative affect from stressful life-events (Kuiper et al., 1998a). This shows indications that negative humor may be more beneficial towards an individual than no humor at all, which needs further research.

The positive humor styles, in general, show substantial evidence of its negative relationships with depression factors (Kfrerer, 2018), and cognitive distortions (Rnic et al., 2016). The positive humor styles are additionally related to psychological constructs such as optimism and hope, which are further related to several indices of psychological and physical well-being (Alarcon et al., 2013). Beyond these relationships, positive (but not negative) humor has been suggested to act as an effective form of emotion regulation (Samson & Gross, 2010). This is further supported by Wu et al. (2018) which shows that there are neurological networks in terms of white matter microstructures that show differences in efficiency in specific brain regions depending on self-enhancing or aggressive use of humor. Specifically, it was identified structural differences in benevolent vs. hostile ways of coping with interpersonal embarrassment, further establishing the existing distinction between positive and negative humor. Furthermore, meta-studies have identified the positive styles of humor overall as positively correlated with mental health (Schneider et al., 2018). Other studies even identified that negative humor styles were negatively related to happiness, whereas positive humor styles were positively related to happiness (Ford et al., 2016), strengthening their position as more adaptive (and positive) forms of humor, and further diminishing the

importance of frequency of social interactions in this study.

Although the distinction between positive and negative humor is problematic, the general consensus of the empirical data show how there are substantial evidence showing greater negative consequences of aggressive and self-defeating humor in general. This may further indicate how the unpredicted nonsignificant findings in this study is explained by the relative irrelevance of frequency of social interactions. This may also reflect how quality truly is more important towards individual well-being, in line with Fiorillo and Sabitani (2011), and therefore show how the quantity of social relations are not relevant enough to be appropriately associated with well-being in terms of negative and positive humor.

The correlational analyses showed predicted results where prediction 1a) confirmed the findings of Čekrljija et al. (2022) that showed how neuroticism specifically have different associations with aggressive humor than previous empirical findings have shown using NEO-PI-R. A possible explanation for this is how the sub-facets of ZKA-neuroticism does not include any aggressive facets, such as “angry hostility” of NEO-neuroticism. In ZKA-PQ/SF the trait Neuroticism includes four facets: anxiety, depression, dependence, and low self-esteem. Out of these, “dependence” and “low self-esteem” may have inhibitory effects on aggressive humor, since aggressive humor in general has the goal of enhancing oneself at the expense of others. Such sub-facets which describe lower levels of self-esteem and greater dependency upon others may have negative effects on the tendency to use this type of humor, as an aggressive type of humor most likely demands individual qualities that promote higher levels of self-esteem and independence. These sub-facets of neuroticism, and the between-person variation within these sub-facets, may explain the predicted nonsignificant correlational relationship in this study.

However, the previously mentioned study (Ruch & Heintz, 2013) used a measure of personality more similar to NEO-PI-R, *Big Five Inventory* (John et al., 1991, as cited in Ruch

& Heintz, 2013), which showed that neuroticism was not significantly correlated to aggressive humor, even though the trait is build up of aggressive sub-facets such as “angry hostility” and “impulsiveness”. This suggest that neuroticism may be irrelevant towards aggressive humor altogether. However, the unconcise findings may also suggest that the findings which are indicative of an association between neuroticism and aggressive humor are mediated by other variables that may influence how neuroticism is related to aggressive humor, such as various social-relational factors or potentially other personality traits and sub-facets. However, the findings from Ruch and Heintz (2013) do not necessarily dismiss the possibility that the aggressive sub-facets of neuroticism in various FFM indeed do explain a correlational relationship between neuroticism and aggressive humor. The examination of sub-facets of neuroticism and possible mediating factors are here suggested for future research of the relationship between neuroticism and aggressive humor.

The second correlational prediction 1b) showed results (as predicted) indicative of a positive correlation between self-defeating humor and the personality traits aggressiveness and neuroticism. These results are in line with the empirical findings of humor-research rooted in both NEO-PI-R (Mendiburo-Seguel et al., 2015; Martin et al., 2003; Plessen et al., 2020) and ZKA-PQ/SF (Čekrljija et al., 2022). Considering self-defeating humor as a coping mechanism, it is not surprising that neuroticism is correlated with the humor style since self-defeating humor is considered as a less adaptive coping mechanism which relies on negative appraisals, anxiety, and depression, such as people who are high on neuroticism are more prone to experience (Martin et al. 2003). The correlation between aggressiveness and self-defeating humor, despite not having any depression factors, may be a coping expression of aggressive behavior that is directed inwards (self-defeating) in favor of being directed outwards (aggressive). These results reflect further how the ZKA-PQ/SF measure of personality is suitable for humor-research, based on the humor style’s association with ZKA-

personality in Norwegian young-adult students. The associations between different combinations of high/low levels of personality traits and humor styles are however of future interest, both one-dimensionally and multi-dimensionally, as these may further explain the associations in question as well as other potential associations.

#### ***4.2 Strengths and limitations***

It can be argued that the ZKA-model of measuring personality is a better suited model to examine humor, and humor styles specifically, compared to other models of personality, because it is more oriented towards the impulsivity of behavior. This type of impulsivity may capture more of the essence of an individuals' innate sense of humor in the sense that the impulsiveness of personality reflects one's impulsive tendency for humor. This is supported by findings from Galloway (2010) that shows how individuals who score above average on each humor style in the HSQ are shown to be more impulsive. The adoption of this ZKA-PQ/SF can therefore be argued to be a strength of this study. However, by the fact that ZKA-instruments can be beneficial towards humor-research, it is surprising that not more humor-research has adopted this model of personality. The fact that this model of personality has received little attention in humor-research, and therefore have a limited empirical pool to support or deny potential findings, is in turn a limitation for the discussion of the findings made in this study (i.e., how neuroticism differs towards aggressive humor between various models of personality). However, the comparison of ZKA-PQ/SF and NEOP-PI-R in the introduction still established how there are few differences between the two, and therefore the argument of the models themselves and the findings being comparable still stands, even though the ZKA-PQ/SF suggests having some differences compared to NEO-PI-R in relation to humor styles. The use of ZKA-PQ/SF is therefore both a strength and limitation by this reasoning, although the limitations are viewed to be lesser compared to the strengths.

The scale measuring social relations in this study (SRFS) includes both digital and

physical interactions in its measures of frequency of social interaction. This can be argued towards being more inclusive of more modern types of social interaction, where digital interactions may be beneficial towards an individual in the same way physical social interactions facilitate social support and support satisfaction. However, the inclusion of digital interaction may complicate what types of social interactions that are contributing factors towards well-being, as these types of interactions are substantially different from face-to-face interactions. Media richness theory (Daft & Lengel, 1986) explains how this is the case and that digital communication is limited in conveying information compared to face-to-face interactions in terms of contextual information being lost and facial cues being absent. This may further contribute to explaining the nonsignificant findings in this study.

Although digital social interactions may be different from face-to-face social interactions, this does not however guarantee that face-to-face social interactions are always beneficial. These types of interactions are however less ambiguous in interpretation, illustrated by Steer et al. (2020) that shows how adolescents find digital forms of mildly aggressive humor (that may be applied with affiliative intentions) as more ambiguous, and by this account interprets this type of humor more frequently as truly aggressive, or as “cyberbullying”. This further illustrates how social interactions needs to be further distinguished, both in terms of their impact on mental health, but also in terms of either being digital or face-to-face.

Since different types of social relations (friends, family, colleagues, etc.) provide different types of interactions in terms of their impact on well-being (relating to the quality of the relations), a scale that includes too many types of social interactions and relations may fail to precisely identify a clear relationship between social relations and well-being. This is further supported by how digital and face-to-face interactions are quite different in relation to well-being (Macdonald et al., 2021). The SRFS can be argued to be such a scale in terms of

how it attempts to include a large range of social relationships and interactions in fear of misrepresenting any potential benefit these may have towards well-being. Mainly, the questionnaire is limited in how it is less specified in what type of “contact” the questionnaire asks for, in addition to including digital interactions while not distinguishing it from face-to-face interactions. It is however important to note that the scale was developed to examine the general relationship between frequency of social relations and well-being, with a core aspect being to control for loneliness. The scale was therefore not developed to precisely distinguish what types of social interactions that has an influence towards well-being, although it can be argued to have been beneficial. The inclusion of many different types of social relations and interactions may also explain why the internal consistency of SRFS was rather low in our sample ( $\alpha = .68$ ). Nevertheless, the scale is unpublished and therefore has not been tested beforehand of this study. By this account, and based on the discussion above, the use of the SRFS is ultimately viewed as a limitation in this study compared to the potential use of scales (or multiple scales) more oriented towards quantity **and** quality of social relations.

In the method-section of this study, it was specified that the sample was delimited to students rather than the total gathered sample. This was reasoned with that the total sample was too demographically inconsistent to be appropriately generalizable towards the general population. Even though the majority of psychological research relies on student samples (Arnett, 2008, as cited in Hanel & Vione 2016), studies have identified serious limitations in the use of student populations to generalize findings towards the general public (Hanel & Vione, 2016; Henrich et al., 2010). Although, such generalizing is not to be encouraged, Jiang et al. (2019) showed cross-cultural findings suggesting similar patterns between western and eastern cultures in the relationship between humor and psychological well-being. Jiang et al. (2019) still shows that they differ somewhat in use of humor as a coping strategy, where eastern individuals were less likely to use humor. The findings in this current study will still

be exclusively generalized towards a Norwegian population of young-adult students, although the findings may provide room for discussion or even comparison of how the ZKA-measure of personality is suitable for humor-research.

### ***4.3 Future research***

For future examination of the association between ZKA-personality traits and humor styles, this study recommends examining how sub-facets of the various personality traits relate more closely to the humor-constructs in HSQ and other measures of humor as well. Specifically, this study promotes studying the relationship between sub-facets of ZKA-neuroticism and aggressive humor, i.e., “dependence” and “low self-esteem” which may have negative associations with aggressive humor. This suggestion is based upon how these sub-facets may indicate qualities that are less likely to result in aggressive behavior in general, but also by the individualistic motives and confident associations with aggressive humor, in terms of how aggressive humor likely demands some characteristics which make you dare to stand out in a crowd and direct aggressive behavior towards someone.

This study further suggests that a one-dimensional approach to humor styles may be too simplistic in regard to the complex structure of humor use and how this relates to personality, especially when examining their implications towards well-being and the categorization of humor as generally positive or negative. A multi-dimensional measure, as used in Leist and Müller (2013) and Galloway (2010), show how combinations of humor styles give more nuanced associations than singular humor constructs up against personality and other psycho-social measures. Such implications are here believed to have substantial explanatory power towards how humor relates to well-being and personality.

This study ultimately proposes a mutual relationship between mental health and humor styles in the sense that they influence each other and through this relationship, is connected to social relations and personality. However, mental health and humor may not necessarily

influence each other equally, which should be reflected in future research. Additionally, it is specified and clearly stated that there is not implied any causality in the relationship between humor and well-being. Furthermore, this study inclines future research to examine how one's personality traits influence one's tendency to use humor styles and how this effect relates to mental health, controlling for how personality may influence mental health directly.

Additionally, it is recommended that future research further examine how personality traits may indirectly be related to humor and mental health, through the influence of social relations. For future examination of the social aspect in the personality-humor relationship, it is also recommended that the research is not solely directed towards how personality may have predispositions for social-relational factors, and through this have causal implications on the frequency of social interactions. This study therefore recommends to also include how social relations (including measures of quantity **and** quality) further influence humor and mental health when controlling for factors such as loneliness, life-satisfaction, and social media use (including the frequency of physical interactions compared to digital interactions) and other factors that may have psycho-social implications. Further examinations of whether negative humor is more beneficial towards an individual compared to no humor at all are also prompted.

## **5. Conclusion**

The findings made in this study, however limited, suggests that one's frequency of social interactions do not increase or decrease one's probability of using negative or positive humor styles, and therefore does not moderate the relationship between how personality predicts humor in a population of Norwegian young-adult students. Here it is stated that future research should implement measures of quality of social relations as well as quantity, where these should be separate measures, in addition to controlling for various related psycho-social variables. Furthermore, this study identified how ZKA-measures of aggressiveness and

neuroticism showed predicted associations with the negative humor styles aggressive and self-defeating humor. Here, the lack of association between aggressive humor and neuroticism is of greater interest as the connection between the two are unconvincing in the empirical data, where the inconsistency is further reflected by a general ambiguity of what is considered as negative humor. General implications for future research are recommended through the closer examination of sub-facets of personality traits towards humor, as well as the application of a multi-dimensional structure of humor.

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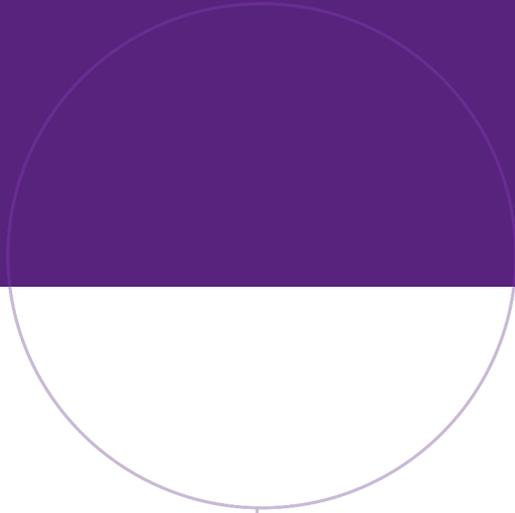
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