

Effect of Mood on Humor

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Abstract

Humor is a social tool that has been documented for hundreds of years with a plethora of studies being produced to attempt to piece together a comprehensive definition of the concept. Among these studies, there have been several analyses regarding the psychological, cognitive, psychobiological, and neural effects of humor, and how they are outwardly manifested. Additionally, several social contexts have been considered. In analyses of humor, several theories have been produced, many based off of figurehead concepts within the field of psychology.

Primary interest of this research study was in whether these studies and theories can support whether there is an association between an individual's style of humor and subjective levels of happiness. Rod Martin and Patricia Doris' Humor Styles Questionnaire (HSQ) measured humor style and Peter Hills and Michael Argyle's Oxford Happiness Questionnaire (OHQ) measured happiness levels. Analysis of the data found that there was a statistically significant positive correlation between the OHQ scores and affiliative humor ($r(98) = .22, p = .028$), a statistically significant positive correlation between the OHQ scores and self-enhancing humor ($r(98) = .253, p = .011$), a statistically significant negative correlation between the OHQ scores and self-defeating humor ($r(98) = -.365, p < .001$), and no correlation between the OHQ scores and aggressive humor ($r(98) = -.087, p = .388$).

Effect of Mood on Humor

Humor is a social behavior that is utilized and experienced on a daily basis many individuals. Although it is difficult to objectively define humor, it can be observed as having negative or positive connotations, depending on the individual and the context in which the humor was used. Humor has been considered for thousands of years, and several perspectives and theories have been developed regarding its use and origins. Various literature reviews and research studies have been produced observing humor as a coping mechanism, but literature directly associating measurable levels of happiness with an individual's style of humor is difficult to find. Previous research has suggested that utilizing humor as a coping mechanism can help prevent negative events or outcomes from having a long-term effect on one's physical and psychological well-being. Being able to utilize humor in such a way is both healthy and beneficial in both short-term and long-term mental health (Gremigni, 2014). It is beneficial to find whether an individual's style of humor is indicative of potential negative issues within an individual's life, and if it can be used as a warning sign regarding intervention necessity.

Laughter and its Effects

"Laughter is the best medicine," a quote by Henri de Mondeville, suggests that laughter has properties which can heal both physically and psychologically (Brehony, 2000). The recorded study of humor dates back to Biblical times, cited in Proverbs 17:22 King James Version (KJV): "A merry heart doeth good like a medicine: but a broken spirit drieth the bones." Laughter has the ability to elicit positive emotional outcomes, and research has shown that it can produce measurable positive psychological and physiological effects (Deaner & McConatha, 1993). Because of this, humor has been historically utilized as a therapeutic technique, dating back to the production of Mondeville's quote. Mondeville was a professor of surgery in the

1300s, and researched advocacy for the use of humor as a post-operative recovery therapy (Brehony, 2000). This newfound information led to several studies being produced over the next hundreds of years regarding the potential medicinal properties of laughter. These studies have propagated the idea that humor has associations with emotional well-being due to the resulting positive emotional reactions, such as an overall uplifting of the individual's affect. When humor is used and laughter results, people tend to report feeling objectively better overall, while also being measurably energetic and happier. Consequently, fewer negative emotions are detected. Additionally, humor can be beneficial in that it can be used to strengthen one's ability to regulate one's emotions, which is a critical part of a stable healthy mental state (Gremigni, 2014).

Humor has positive effects not only on mental health, but also physical health. A good laugh can boost an individual's immune system, lower blood pressure, and increase pain tolerance. The mental effects are similarly positive, consisting of an increase in perception of positive emotions and the strengthening of an optimistic attitude towards life (Schneider et al., 2018). Previous research has shown a negative relationship between sense of humor and depression, in that individuals utilizing sense of humor often had measurably lower levels of depression. One study conducted by James Thorson and F.C. Powell (1994) measured this by developing and administering the Multidimensional Sense of Humor Scale which, according to their research, accurately and reliably measures an individual's subjective styles of humor. Results from utilization of this scale when compared with results from Zimmerman and Coryell's Inventory to Diagnose Depression administered to the same individuals showed a negative correlation between the two variables, strengthening the advocated benefits of a sense of humor (Thorson & Powell, 1994).

Styles of Humor

Although humor is unable to be objectively defined, research by Rod Martin has defined healthy and unhealthy styles of humor in their development of the Humor Styles Questionnaire (HSQ). An example of an unhealthy style of humor would be a self-defeating style of humor, which has been defined as when individuals make severe self-disparaging remarks disguised as humor with the intention of ingratiating themselves to others. This style of humor is detrimental as it has been shown to increase negative emotions within the individual, even if laughter is elicited. An additional style of humor defined by Martin (1996) is aggressive humor, in which individuals enhance themselves through disparaging comments directed towards others. This style of humor was not found to have direct consequences to the individual utilizing it, but rather negative psychosocial consequences, which could lead to conflict or relationship impairment that could create stressors for the individual (Martin, 1996). An additional style of unhealthy humor research by Paolo Gremigni (2014) is used to conceal an individual's negative emotions or issues by using humor to create jokes about it. This is a form of defensive denial, as the individual would prefer to create jokes regarding personal problems rather than constructively confront them (Gremigni, 2014).

Healthy styles of humor serve as an excellent coping mechanism due to positive subsequent effects such as "relief of tension, utilization as a survival mechanism, and as a defense against depression" (Deaner & McConatha, 1993, p. 2). Martin (1996) researched two styles of healthy humor: affiliative and self-enhancing humor. It has been shown through prior research that individuals who maintain an affiliative humor style generally use humor to gain interpersonal or social rewards; they use their humor in order to get others to laugh, or to cause others to hold them in a higher social regard. In tandem, self-enhancing humor is used to

maintain a positive outlook on life. Individuals who utilize a self-enhancing style of humor are generally associated with a generally humorous perspective and an amusement towards the absurdities of life. This style of humor is most closely defined as a coping mechanism, as it enables individuals to avoid negative emotions while still maintaining a realistic perspective on their situations or contexts. These dimensions of humor are measured in administration of the HSQ, which can be beneficial when comparing negative dimensions of humor with levels of happiness (Martin, 1996).

A further study which displayed such benefits measured the relationship between utilization of humor and depression. When 18 inpatients diagnosed with clinical depression were observed longitudinally, and it was found that humor was both a predictor and an evaluator for their depressive symptoms, meaning humor was found to have a positive correlation with improved clinical symptomology (Deaner & McConatha, 1993). There is little research available that examines whether an individual's mood has associations with one's styles of humor.

Evolutionary Functions of Humor

The use of humor and laughter is a human behavior that can be traced back much further than the 1300s. It is considered a universal aspect of the human experience and a generally recognizable act of communication. Although humor may be received and communicated differently throughout different cultures, the act is still relatively universal in the emotions experienced by the individual. Next to crying, laughing is one of the first vocalizations made by human babies, observed as early as 4 months in reaction to the actions of another individual (Martin, 2007). Laughter has been observed even in the case of blindness and deafness, which propagates the idea of the innateness of the concept (Gamble, 2001). According to Martin's evolutionary research, a form of humor has been observed in primates other than humans,

including chimpanzees, apes, bonobos, orangutans, and gorillas. In the case of playful activities, primatologists have observed vocalizations similar to human laughter (Martin, 2007). The use of complex humor in social contexts has additionally been evidenced in the case of chimpanzees and gorillas. In a literature review conducted by Jennifer Gamble (2001) regarding the use of humor in apes, it was found that there were displays of complex social humor in the case of an ape who had been taught the ability of communication through sign language. The ape was observed to utilize concepts such as punning, joking, and lighthearted insulting. These pieces of evidence suggest the potential of evolutionary properties within humor, which can be further explained through social play (Gamble, 2001).

Although it is not necessarily comparable to modern day human social complexities, connections can be drawn from primate play-signals to the origins of language development. Perhaps these primordial individuals communicated social context through the use of laughter rather than spoken language. In this context, laughter could be a reliable social indicator that an interaction, or play-fight is not aggressive in nature. This would suggest laughter has important social emotional functions that have contributed to natural selection, or the survival of the species. Through thousands of years of human evolution and development of higher order intellectual and linguistic capabilities, these play-signals appear to have developed into what is referred to as mental-play, which is defined as words and ideas that communicate the modern definition of humor (Greengross, 2008).

Humor as a Social Function

Humor has been described as having a primarily social context, and it has been considered a social phenomenon throughout its history in research. The majority of past literature regarding humor focuses primarily on jokes as a mediator of humor and laughter, but it is

important to consider the cognitive mechanisms of humor. Research has shown that jokes are actually an insignificant part of everyday humor, and cognitive psychologists have developed a growing interest in “conversational witticisms, irony, puns, and sarcasm” (Martin, 2007, p. 110), rather than focusing on developing theories through the analysis of jokes. Unfortunately, there is not much research regarding this topic. Linguistics and pragmatism have not been strongly considered in the study of humor in a social context, in that jokes are preferred over the analysis of the niche complexities of humor within everyday conversation (Martin, 2007).

Recent research regarding humor has suggested that variables such as irony and sarcasm are heavily dependent on social context, which is difficult to accurately pinpoint in the context of research. With the virtually infinite potential for different social contexts to be considered, integrating social context into future research regarding humor will strengthen its overall understanding. Additionally, research may be limited due to a focus on humor comprehension rather than humor creation (Martin, 2007). Research on associations between an individual’s style of humor and one’s overall levels of happiness may shed some light onto the cognitive origins of humor.

Early Theories of Humor

It is important to consider the historical research and subsequently developed theories of humor as considered by cognitive psychologists, linguists, and other types of theorists. As previously mentioned, humor has been considered a beneficial social tool for thousands of years, and several theories have been developed regarding how individuals understand jokes or perceive someone, something, or some situation to be funny. An analysis was conducted on five different theories that were reasoned to be most influential in the study of humor, including “psychoanalytic, superiority/disparagement, arousal, incongruity, and reversal theory” (Martin

2007, p. 31). Although these theories are useful in looking at the concept of humor as parts of a whole, they are unable to explain humor in its entirety. As previously mentioned, humor is difficult to objectively define; however, the utilization of these theories allows for the lenses of different perspectives to pursue research. Additionally, the combined use of these theories may produce as close to a broad image of humor as possible.

Psychoanalytic Theory

Sigmund Freud's psychoanalytic view of humor was one of the first influential theories regarding the perception of humor. Freud's general idea was that individuals are full of unconscious, seething desires that eventually manifest in some physical way, and laughter was no exception. Freud reasoned that laughter was one of many potential methods in which to release excess nervous energy. He attempted to categorize humor through three different subcategories: wit/jokes, humor, and comic (Freud, 1960). In Freud's explanation of his subcategory wit/jokes, he reasoned that the success of laughter as a method to release nervous energy was in its enabling the individual to enjoy "illicit pleasure derived from releasing some of our primitive sexual and aggressive impulses" (Martin, 2007, p. 33). Paul McGhee (1979) provided several examples of this idea, such as this joke:

"Mr. Brown: 'This is disgusting. I just found out that the janitor has made love to every woman in the building except one.'

His wife: 'Oh, it must be that stuck-up Mrs. Johnson on the third floor.'" (McGhee, 1979, p. 9).

When analyzing this joke, one would infer that the wife, along with the other women in the building had had a sexual affair with the janitor. Martin, in his analysis of this joke, reasoned that the release of nervous energy came not only from the indirect sexual implications, but also the aggressive nature of the joke. The husband being cheated on or the stupidity of the wife in

admitting their infidelity appeals to an aggressive drive that the individual unconsciously hides. Jokes that do not necessarily have a sexual or provocative nature may, according to Freud, still be funny; but this would be due to appreciation for the clever thought processes that build the joke (Martin, 2007).

In Freud's second subcategory, "humor," his characterization of the word is not necessarily related to the modern definition of humor. Freud reasoned in this subcategory that fearful, saddening, or angering situations were viewed in an opposite manner through examining humorous or amusing aspects of the situation. Further, individuals may laugh at their own misfortunes, viewing them through an amused lens rather than a negative one, as far as is possible. This ties back to the Freudian notion of releasing nervous energy; in order to avoid negative affect, the individual views a perceived unfortunate situation as positively as possible (Freud, 1960). This facet of Freud's perspective of humor is useful regarding associations between happiness and style of humor, as it has been reasoned that a certain style of humor may be utilized to remedy negative psychological affect (Brehony, 2000). If possible, analyzing a comparison of these variables may reveal further information regarding how certain styles of humor may be related to an individual's level of happiness.

Freud's third subcategory, "comic," refers to nonverbal forms of comedy, where an individual witnesses a certain non-speaking humorous situation. For example, a circus clown performing a juggling act would be an example of Freud's "comic." Freud tied this into his classic theories by reasoning that this form of childish humor pushes the individual into a form of comforting regression; they release nervous energy by experiencing childlike laughter reminiscent of the past (Freud, 1960). Martin reasoned that aggression is also somewhat tied to this category by describing a situation in which an individual slips on a banana peel (Martin,

2007). Experiencing amusement at the misfortune of the injured individual could be described as having an aggression-release based context.

Superiority/Disparagement Theory

The superiority/disparagement theory of humor is heavily based on aggression. This theory assumes underlying malice, aggression, or superiority in the majority of communicated humor, predating to early philosophers such as Plato and Aristotle. According to John Morreall (1987), Plato maintained individuals delight in the misfortune of others, feeling amusement rather than empathetic pain. Aristotle maintained a perspective of similar context, in that he believed humor was a malicious way to mock less fortunate individuals, and that performative “comedy” was a means of displaying an individual’s superiority over the less fortunate (Morreall, 1987). Several later theorists strongly identified with these notions such as a professor named Charles Gruner (1997) who reasoned that humor was a way of expressing playful aggression. He described humor as a contest or competition, in that there are winners or losers in a battle of wit. Gruner identified with an evolutionary perspective regarding humor, which he took from researcher Albert Rapp (1951), who considered laughter and humor to be a primordial release of excess energy. In the context of a contest of physical strength, Rapp described the winner’s laughing at the end of the battle as a release of the subsequent pent-up energy from the fight, and as a display of superiority over the defeated individual. Gruner reasoned that, with the evolutionary development of spoken language, this laughter turned into the modern-day definition of humor: the use of wit to display superiority rather than physical aggression (Rapp, 1951).

Skeptics of this theory may reason that the use of innocent humor, such as puns or childlike jokes discredit this, as they seem innocent at a surface level. However, Gruner argued

there is an underlying display of the individual's intelligence when producing these puns or jokes, which again leads back to the idea of superiority. Another possible confounder of this theory is a self-deprecating style of humor, but it is again reasoned that this theory could apply in the context of feeling superiority over one's past self or past mistakes, which the individual would theoretically hold in contempt (Gruner, 1997). This theory provides an interesting, although pessimistic view of humor, aligning with some of Freud's psychoanalytic ideas, and contributing to the researcher's reasoning that an individual's humor can suggest underlying factors.

Arousal Theory

The arousal theory of humor focuses on its role as a tension-relief, drawing on several different perspectives of researchers throughout history. One of the earliest individuals to propagate the arousal theory of humor was Herbert Spencer in 1860, who propagated a now-outdated stress model based on a hydraulic system. In this theory, Spencer suggested that stress would build up in the body like steam, and that laughter was a primary method of ridding oneself of such steam (Martin, 2007). Later theorists proposed similar ideas while also discrediting Spencer. Daniel Berlyne suggested that humor is an expression of arousal and pleasure resulting from increases in overall levels of arousal, potentially from a situation in which tension was relieved. Although this is a summation of Berlyne's theories, it does contribute to the arousal theory of humor in the aspect of relating arousal to experience of humor (Berlyne, 1972).

From a neuropsychological perspective, the arousal theory aligns with studies in which sympathetic nervous system activity was monitored while individuals were shown some form of humorous content. For example, professor of psychology James Averill produced a research study in which individuals were shown a comedy act, and their sympathetic nervous system

activity was monitored. It was found that there was a measurable increase in skin conductance and heart rate, which suggested a possible association between the experience of humor and such arousal (Averill, 1969).

A further study conducted by researchers Ronald Langevin and H.I. Day (1972) produced similar results, in which participants were to rate how humorous a series of cartoons were while changes in arousal were monitored. It was found that, when the individuals rated one cartoon funnier than the other, a measurable increase in heart rate and skin conductance was found (Langevin & Day, 1972). The arousal theory of humor sheds light on some neurological aspects of the experience of humor but does not appear to account for social context (Martin, 2007).

Incongruity Theory

The incongruity theory of humor focuses less on the social and emotional aspects of humor, but rather on the cognitive aspects. The theory is defined in its name, “incongruity:” humor is defined by spontaneous, peculiar, or surprising factors, differing from the norm or an individual’s usual expectations. This idea has had historic popularity, with several researchers and philosophers aligning their notions regarding humor with this theory. For example, according to Morreall, a German philosopher of the 1800s by the name of Arthur Schopenhauer propagated that the cause of laughter could be attributed to the disparity, or incongruity to real objects, or what was actually happening (Morreall, 1987). Psychologist figureheads have also acknowledged this idea, such as Hans Eysenck who asserted that humor was so amusing due to its juxtaposition to objectivity (Eysenck, 1942). Arthur Koestler coined the term *bisociation* to describe humor in the context of this theory, which occurs when some sort of situation, spoken or written idea, or event is perceived between two different juxtaposing perspectives. Koestler reasoned most puns or jokes fall within this category, as many begin with one scenario and

conclude with an unexpected idea. Martin provided an example of this: “Why do people become bakers? Because they knead the dough” (Martin, 2007, p. 63). Bakers knead dough as part of their jobs, but the juxtaposing perspective dictates that they “need the dough,” or money. This is a good propagator of the incongruity theory, as the humor differs from the individual’s expectations and norms; it is incongruous. When considering information from this perspective, many forms of humor could fall into this category.

To further develop this theory, researcher Thomas Shultz of McGill University developed the incongruity-resolution theory. This theory postulated that punchlines of a joke are generally incongruous with an individual’s initial perspective of the joke, which is encompassed by the “incongruity” part of the theory. The “resolution” part of the theory comes in when the individual goes back to resolve the incongruous aspect of the joke, thus enabling the punchline to make sense (Shultz, 1972). If the incongruity is resolved and the individual finds sense in the punchline, humor is achieved and laughter results. Martin cited the following joke to illustrate this theory; “*A lady went into a clothing store and asked, ‘May I try on that dress in the window?’ ‘Well,’ replied the salesclerk doubtfully, ‘don’t you think it would be better to use the dressing room?’*” (Martin, 2007, p. 64). This is a good example of the theory, as the punchline does not appear relevant to the initial part of the joke; however, after close examination, one resolves the incongruity by realizing that the humor lies in the clerk assuming the woman would try on the dress in front of the window.

According to the incongruity-resolution theory, jokes must have some sort of unexpected ending or aspect to them, and the more unexpected the outcome, the funnier the joke. This notion has not been supported by research on the theory, however. Studies with individuals involving humor often showed jokes with predictable endings were subjectively reported as being funnier

than jokes with unpredictable endings. For example, a study by researcher Douglas Kenny supported these findings, in which two groups of participants were asked to rate how predictable the punchline of a joke was, and how funny they found the joke (Kenny, 1955). When statistically analyzing these two factors, it was found that, contrary to the incongruity-resolution theory, a positive correlation was measured between predictable punchlines and reported subjective funniness of the jokes.

Reversal Theory

The reversal theory of humor analyzes humor for its playful aspects, and how it is essentially a non-serious, non-harmful activity. Martin elaborated on this by observing evolutionarily, in chimpanzees, how humor was equated to playing in these contexts. For example, rough and tumble play or tickling often coaxed a laughter-like sound out of these primates, which was associated with other humorous contexts as evolution proceeded throughout history. There were historically not many researchers or theorists that focused on the play aspect of humor, however a few have been noted to give some attention to it. For example, researcher Max Eastman (1936) claimed that humor should not be taken so seriously, and that it was a non-serious social activity. He was quoted saying “no definition of humor, no theory of wit, no explanation of comic laughter, will ever stand up, which is not based upon the distinction between playful and serious” (Eastman, 1936, p. 103). This perspective is interesting as it almost simplifies humor to simple contextual distinction. This suggests that humor is but a social tool, and that it does not have deep scientific value within the context of research. Eastman criticized past research, stating that it appeared too clinical and took away from the surface level lightheartedness of humor. It can be reasoned that there are flaws with this perspective, however, as much research has been conducted which shows that laughter and humor were worth

researching for their potential for deeper significance. Berlyne (1969) and Gruner (1997) both acknowledged the close associations between humor and play, and how humor will always have an underlying playfulness.

The reversal theory was originally propagated by psychologist Michael Apter (1991), which was primarily referring to motivation and personality. Apter's idea of humor as play was derived from this broader theory (Apter, 2001). He described play as a state of mind, a perspective an individual uses to define the events occurring around them. To experience humor in its truest form, according to him, individuals must utilize this frame of mind, to which he refers as the *paratelic* state. The definition of this word lies in its prefix and suffix, *telic* being the Greek word for "goal directed;" thus, *paratelic* would refer to a less serious, more fluid state of mind. Apter's use of the word reversal comes from his notion that individuals switch between a *telic* and *paratelic* state of mind (Apter, 1992)

In the *telic* state of mind, an individual is serious and goal oriented, and is uninterested in engaging in any sort of play activity. In contrast, the *paraletic* state of mind individual is nonserious, living for the moment, and enjoys activities for the sake of enjoyment. As opposed to Berlyne, who attributed humor to the simple experience of arousal, Apter reasoned that levels of arousal were contingent upon which frame of mind the individual is in at that point in time. Individuals in the *telic* state would be resistant to drastic increases in levels of arousal, and individuals in the *paratelic* state would be welcoming of increased levels of arousal (Apter, 1982). In fact, Apter describes individuals in the *paratelic* state as actively seeking out these levels of arousal by engaging in stimulating physical or mental activities (Martin, 2007). Apter cited humor as one of these engaging activities, describing it as an enjoyment of *paratelic* arousal. He mentioned aggression and sexual desire as a normal part of some forms of humor as

well, reasoning that the experience of these facets is a part of the experience of the *paratelic* arousal (Apter, 1982). Earlier research has also bolstered Apter's ideas, in that individuals with measurably higher levels of arousal have an easier time experiencing enjoyment of humor (Freud, 1960).

Apter's (1992) theory also considers cognitive aspects of humor. He reasoned individuals experience cognitive synergy when interpreting humor, in that "two concurrent but contradictory interpretations of the same object" (Martin, 2007, p. 77) are involved in reasoning through humor. This facet of Apter's interpretation is reminiscent of the incongruity theory, and the joke used to describe this theory can explain Apter's cognitive reasonings of humor: "*A lady went into a clothing store and asked, 'May I try on that dress in the window?' 'Well,' replied the sales clerk doubtfully, 'don't you think it would be better to use the dressing room?'"*" (Martin, 2007, p. 64). After the first interpretation of the joke is trumped by the second in understanding the double meaning of the joke, *paratelic* arousal is promoted within the individual (Apter, 1992).

Individual Personality and Humor

The numerous theories of humor contribute to a larger picture when trying to fully understand the concept of humor, but it is important to consider how individual personality can affect interpretations of humor. As mentioned in the previous section, Humor as a Social Function, there are infinite possibilities for context which would greatly affect the interpretation of humor, and the creation of these contexts is dependent on the personalities of the individuals participating in the conversation. When asked to describe one's peers, sense of humor is often listed as one of their notable personality traits. Personality is, according to researchers and psychologists, generally defined as a set of relatively unchanging characteristics and traits that define an individual, such as influencing cognitions, motivations, and behaviors (Allport, 1961).

Personality seems to influence sense of humor in that it affects the individual's timing, style, and subjective experience of humor overall. Humor is situational, and an individual's type of personality seems to influence what kind of joke or style of humor an individual might deem appropriate to utilize within a given situation. For example, an individual may feel more inclined to say a joke among his peers, but much less inclined to say a joke in the middle of a work meeting. The reverse is also true, and an individual who identifies as more extroverted may be inclined to tell a joke during a work meeting (Martin, 2007).

Many would recognize sense of humor as a desirable trait, shown in a study by George Allport in which 94% of participants rated themselves as having either an average or above average sense of humor, and only 6% admitting to a below average sense of humor. When describing the good qualities of an individual, sense of humor is often preceded by qualities such as intelligence, or good looks (Allport, 1961).

Humor is also considered, by some personality psychologists, as a creative ability. Being able to produce humor which elicits laughter is an effective skill in relieving the tension of others, and it is likely that elicited laughter may relieve personal tension through perceived social acceptance. According to research by Martin (2007), individuals who are more socially sensitive and attuned to the perceptions of others, as well as being capable of higher levels of creativity and divergent thinking, appear to be more adept at utilizing humor. This idea promotes the categorization of sense of humor with other desirable personality traits.

Besides being a desirable personality characteristic, sense of humor is also an important facet of good mental health. With associations between humor and happiness, the use of humor as a coping mechanism closely aligns with both the individual's personality and the situational context of the humor. As previously mentioned, humor which elicits laughter has the potential to

promote cheerfulness and higher levels of energy, while subsequently reducing negative psychological affect such as depression and anxiety-like symptomatology. Thus, it can be inferred that individuals who are more characteristically inclined to utilize humor within their daily lives are likely less afflicted by such negative psychological. Martin and Herbert Lefcourt (1984) developed the Coping Humor Scale (CHS) in order to analyze individuals with associations with the utilization of humor as a coping mechanism (Martin & Lefcourt, 1984).

The stated purpose of the CHS, as opposed to the HSQ which attempts to measure humor more broadly, is to measure how much individuals use humor to cope with their personal stresses. The CHS asks situational and descriptive questions regarding the individual's personality and reactions, such as how they would react in a potentially stressful situation, or how they generally react to the stressors of everyday life (Martin & Lefcourt, 1984). The CHS has been shown to have good construct validity, in that significant correlations were found in individual self-report information of using humor as a coping mechanism and generally not taking themselves overly seriously. Additionally, it was found that, in terms of using humor as a coping mechanism, high-scoring individuals were more inclined to make humorous comments during stressful movie scenes or situations, but not necessarily during non-stressful, menial, or creativity tasks or situations. In a study in which individuals were to attend stressful dental appointments, high scorers were recorded as making a significantly higher number of jokes and comments than if they were in a non-threatening situation. These observations and measures contribute to good construct validity of the CHS (Martin, 2007).

Gender Differences in Humor

There has been research conducted throughout history observing the gender differences in different aspects of humor. It can be assumed that the general opinion in modern society is that

men are perceivably funnier than woman, and much of early research has supported this idea (Martin, 2007). Social scientists Martin Lampert and Susan Ervin-Tripp reasoned that men are much more likely to engage in the act of humor, such as teasing or kidding, whereas women are likelier to be an audience which appreciates such jesting. Further, men have been shown to enjoy humor containing aggressive and sexual themes more than women, and women have been shown to enjoy humor with more nonsensical themes, or anecdotal humor (Lampert & Ervin-Tripp, 1998). Later studies have reasoned that this perspective is biased, however, iterating that these studies focused more on the appreciation of “canned” jokes or cartoonish humor, rather than the creation of humor within a social context (Martin, 2007). Additionally, drawing on the discussion regarding how personality influences an individual’s perception of humor, it is difficult to define a general sense of what women versus men appreciate when it comes to humor. It is also important to consider the historical context in which these studies were conducted, which may have contributed to a response bias on the part of women (Lampert & Ervin-Tripp, 1998).

Antony Chapman and Nicholas Gadfield reasoned that the type of humor used within the research may have confounded the results. Jokes with a sexual nature are often directed towards women in a sexist manner, especially in the context of history (Chapman & Gadfield, 1976). Previous research has shown that women do not necessarily appreciate these sexist sexual jokes as much as men do, but in the case of non-sexist sexual jokes, there was not much measurable difference found between the genders’ appreciation of the humor. The researchers used these observations to deduce that women may enjoy jokes of sexual nature just as much as men do, but may do so for different reasons, such as for the purpose of increasing social reputation. Conversely, the researchers reasoned that men engage in this sort of humor for the purpose of tension relief, aligning somewhat with the psychoanalytic theory of humor (Martin, 2007).

Although it is important to consider the historical context of these studies, it can be reasoned that sexist humor is still present in modern day society, and several studies have been done to measure its implications. A study conducted by Kathryn Ryan and Jeanne Kanjorski (1998) examined Freud's theory that individuals who use sexist humor may have personal identifications with hostility towards women, citing the psychoanalytic theory of humor and its reasoning that humor is a release of aggression desires. The researchers had a group of male and female college students rate sexist jokes on a scale of how humorous they found them, with the goal of observing potential associations with enjoyment of sexist humor and sexist attitudes in men. Additionally, they had participants take the "Rape Myth Acceptance measure, the Adversarial Sexual Beliefs measure, the Acceptance of Interpersonal Violence measure, the Likelihood of Forced Sex measure, the Psychological Aggression measure, the Physical Aggression measure, the Sexual Aggression measure, and the Injury measure" (Ryan & Kanjorski, 1998, p. 4). This battery of questionnaires was administered alongside the ratings of the sexist jokes in order to measure the existence of associations between the social implications of these measures and appreciation of sexist humor. It was found, in men, the enjoyment of such sexist humor had associations with high scores in each of the consecutive batteries, suggesting that the enjoyment of such humor is associated with hostile, sexist, or aggressive tendencies (Ryan & Kanjorski, 1998). Previous research has aligned well with these findings and Freud's psychoanalytic theory of humor, such as by researchers David Landy and David Mettee (1969), which showed that humor which is hostile in nature decreased measurable levels of arousal and aggression within the individual. The researchers reasoned humor has cathartic properties, which was measurably higher in men when utilizing aggressive or sexual humor (Landy & Mettee, 1969).

According to Martin (2007), recent researchers have conducted studies in which types of humor which men and women typically used were analyzed (Martin, 2007). In a study conducted by Mary Crawford and Diane Gressley, a group of men and women were surveyed regarding their personal appreciations and typical creations of humor, and it was found there were no marked differences in enjoyment of self-deprecating humor, enjoyment of innocent humor such as cartoons or comics, and even the enjoyment of sexual humor. It was found, however, that men were shown as more likely to enjoy and create aggressive or hostile humor, a higher likelihood of telling canned jokes, and a greater appreciation for professional comedy (Crawford & Gressley, 1991).

Psychobiology of Humor

With a focus primarily on psychological aspects of humor, it is also important to consider the physical, neural, and psychobiological aspects of humor. Connections between humor and levels of happiness can be shown in the physical reactions that are elicited by humor, such as laughter and smiling and measurable neural reactions. A vast number of reactions take place in the brain to facilitate the experience of humor, and like the majority of psychological activities, a complex system of reactions can be noted (Martin, 2007).

Laughter and Expression

As previously mentioned, the act of laughter has been recorded back to primordial humans as an indication of nonthreatening behavior. Laughter is defined as a nonverbal way of communicating the emotions surrounding play, or mirth. Laughter, as a social cue, can vary in intensity depending on the appreciation of the perceived stimulus. An individual who found a situation or phrase somewhat funny may produce a small smile at the low end of the intensity range, and conversely, an individual who found a situation or phrase intensely funny may

produce loud laughter often accompanied by the engagement of other physical body functions and reactions. There are psychological, behavioral, and experiential components associated with the experience of mirth, each with its own measurable aspects which contribute toward perceived value of humor (Martin, 2007). Alongside the physical reactions that confirm that an individual is perceiving something as humorous such as a perceived relaxed state (Schenider et al., 2018), there are physiological changes that are taking place inside the brain, referred to as the neural aspects of humor (Martin, 2007).

Neural Aspects of Humor

The experience of humor, like many other nervous system activities, begins with a perceived external stimulus. Within the context of social interaction, one must perceive a playful incongruity which is done through the cerebral cortex activity, such as “auditory and visual perception, language comprehension, social cognition, and logical reasoning” (Martin, 2007, p. 153). Confirmation of this playful incongruity releases a myriad of emotional reactions, and the prefrontal cortex and limbic system are stimulated. These emotional outcomes are of interest as subjective levels of happiness are the primary factor being recorded. These subsequent biochemical molecules activate the autonomic nervous system and endocrine system. The experience of positive emotional reactions prompt the individual to smile and laugh, which involves the brainstem and forebrain, and in terms of smiling, the face muscles, larynx, and respiratory system are all stimulated (Martin, 2007). Unfortunately, until recent years, not much biopsychological research regarding humor has been conducted. What information is known has been observed through functional Magnetic Resonance Imaging (fMRI) studies. However, more biopsychological research is being produced, and a growing interest in the study of humor has been noted.

Humor Styles and Happiness

With all of this information taken into consideration, there are two hypotheses: 1) High-scorers in aggressive and self-defeating humor styles will have associations with lower levels of happiness, and 2) Individuals with higher scores in affiliative or self-enhancing humor will have associations with higher levels of happiness.

Method

Participants

A random sample of 100 male and female college-aged psychology majors who are students at Liberty University was collected. Participants were gathered through the use of psychology activities via Liberty University's psychology activities webpage, which are extracurricular events or lectures which facilitate enrichment of the student's knowledge in psychology or other related topics. Psychology majors at Liberty University are required to complete 4 of these activities per semester. Liberty University's psychology activities webpage contains a list of these extracurricular events or lectures, along with links to opportunities to participate in research studies being conducted by faculty or students.

Scale

The scale that was used to measure humor, the Humor Styles Questionnaire (HSQ), measures four types of humor: affiliative, self-enhancing type humor, and aggressive, self-defeating type humor. Individuals who identify with an affiliative humor style utilize humor for the purpose of increasing their social reputations or reaping social rewards. This is done by maintaining the goal of making other individuals laugh, thus increasing the individual's social reputation. In tandem, self-enhancing humor is utilized to maintain a positive outlook on life.

Individuals who identify with this style of humor find amusement in the incongruities and tribulations of life.

Conversely, those who maintain an aggressive humor style utilize their humor to manipulate and criticize others, without empathy towards how such humor may affect others. Those with a self-defeating style of humor utilize humor more in the sense of self-deprecation; humor is used to bring attention to one's own weaknesses, in order to ingratiate themselves to others, or to bring validation to their own insecurities. Unsurprisingly, people with these styles of humor find difficulty in maintaining strong social relationships. The implications of the negative characteristics of an individual who identifies with negative humor styles may be indicative of a lower level of overall happiness, and hence a warning sign of potential negative psychological issues (Ford et al., 2016).

Measures

Humor Styles Questionnaire (HSQ)

The Humor Styles Questionnaire (HSQ) was administered to measure humor style. The HSQ was developed by Rod Martin and Patricia Doris in 2003 (Martin, Puhlik-Doris, Larsen, Gray & Weir, 2003) and measures two positive and two negative dimensions of humor. The two positive dimensions are affiliative and self-enhancing humor, and the two negative dimensions are aggressive and self-defeating humor. The survey employs a Likert-type scale from 1-7, from totally disagree to totally agree. This scale was a good fit as it subcategorizes humor styles in a way that fits with the research goals, which are positive and negative dimensions of humor (Schneider et al., 2018).

Oxford Happiness Questionnaire (OHQ)

The Oxford Happiness Questionnaire (OHQ) was administered to measure levels of happiness. The original OHQ was developed in 2002 by Peter Hills and Michael Argyle, revised from the Oxford Happiness Inventory, which is a previous and now outdated questionnaire. The OHQ measures an individual's subjective level of happiness at that point in time using a Likert type scale from 0-6, from strongly disagree to strongly agree. The scale measure variables pertaining to life satisfaction, social satisfaction, and general perspectives regarding daily life. This scale was a good fit as it effectively measures subjective levels of happiness in a way that avoids ethical issues with conditions such as depression (Hills & Argyle, 2002).

Procedure

The Institutional Review Board (IRB) of Liberty University granted permission to conduct this study with Liberty University psychology major students. Through the use of PsyToolKit to host the surveys, the HSQ was administered first in order to measure the participant's humor style. Then, the OHQ was administered to measure the participant's level of happiness. Then, using a Pearson correlation analysis, the data were analyzed for potential significant correlations at the 0.05 level.

Results

Initially, descriptive statistics were analyzed which included the mean and the standard deviation. In the case of the OHQ scores, it was found that the average score was 124.21 with a standard deviation of 21.49. In the case of the affiliative humor scores (HSQ), it was found that the average score was 47.33 with a standard deviation of 6.52. In the case of the self-enhancing humor scores (HSQ), it was found that the average score was 36.18 with a standard deviation of 7.97. In the case of the aggressive humor scores (HSQ), it was found that the average score was

28.3 with a standard deviation of 8.04. In the case of the self-defeating humor scores (HSQ), it was found that the average score was 32.41 with a standard deviation of 10.72.

Each individual subcategory within the HSQ was subsequently analyzed for correlations between its scores and the scores of the OHQ through the use of a Pearson correlation analysis. In assessment of the relationship between the OHQ scores and the affiliative humor scores (HSQ), there was a positive correlation between the two variables: $r(98) = .22$. The scatterplot (Figure 1) visually summarizes the results. At a significance value of $p = .028$, there is enough evidence to suggest a significant positive correlation between OHQ scores and affiliative humor scores.

In assessment of the relationship between the OHQ scores and the affiliative humor scores (HSQ), there was a positive correlation between the two variables: $r(98) = .253$. The scatterplot (Figure 2) visually summarizes the results. At a significance value of $p = .011$, there is enough evidence to suggest a significant positive correlation between OHQ scores and affiliative humor scores.

In assessment of the relationship between the OHQ scores and the aggressive humor scores (HSQ), there was no correlation between the two variables: $r(98) = -.087$, $p = .388$. The scatterplot (Figure 3) visually summarizes the results.

In assessment of the relationship between the OHQ scores and the self-defeating humor scores (HSQ), there was a negative correlation between the two variables: $r(98) = -.365$. The scatterplot (Figure 4) visually summarizes the results. At a significance value of $p < .001$, there is enough evidence to suggest a significant negative correlation between OHQ scores and self-defeating humor scores.

Discussion

Comparison of the data indicated support for some of the initial hypotheses. In analysis of the relationship between the OHQ scores and the affiliative humor scores, a statistically significant positive correlation was discovered. This indicates that as OHQ scores increase, affiliative humor scores increase, supporting the initial hypothesis that individuals with higher scores in affiliative humor will have associations with higher levels of happiness. In tandem, analysis of the relationship between the OHQ scores and the self-enhancing scores revealed a statistically significant positive correlation. This indicates that as OHQ scores increase, self-enhancing humor scores increase, supporting the initial hypothesis that individuals with higher scores in self-enhancing humor will have associations with higher levels of happiness.

In analysis of the relationship between the OHQ scores and the aggressive humor scores, no significant correlation was discovered. Conversely, analysis of the relationship between the OHQ scores and the self-defeating humor scores revealed a statistically significant negative correlation. This indicates that as OHQ scores decrease, self-defeating humor scores increase, supporting the initial hypothesis that individuals with higher scores in self-defeating humor will have associations with lower levels of happiness.

These findings aligned with the discussed literature with the exception of the non-statistically significant correlation between the OHQ scores and the aggressive humor scores. Statistical indication that there is a relationship between higher levels of happiness and higher levels of the positive subcategories of humor (as defined by the HSQ) is supported fundamentally by most early theories of humor, which often cited feelings of arousal or generally positive physiological and psychological expressions in response to the experience or production of humor. Additionally, these results are supported by Martin's literature regarding the

physiological and psychological aspects of humor, in that negative emotions are produced post-utilization of his defined negative subcategories of humor (Martin, 1996).

In consideration of the results of the research study, Martin discovered that an aggressive style of humor often has psychosocial consequences rather than psychological (Martin, 1996). Taking this into consideration, it can be inferred that a non-significant correlation could be attributed to positive arousal resulting from certain types of aggressive humor (sexual, disparaging, etc.), considering facets of the psychoanalytic theory of humor (Freud, 1960). In the context of negative affect, primary interest was in whether or not these negative emotional outcomes had any effect on measurable levels of happiness, which was supported by the reported negative relationships between the OHQ scores and the negative subcategories of humor. In the context of positive affect, humor involving the production of laughter, mirth, or additional measurable physiological results of humor has had historical implications of described medicinal properties (Gremigni, 2014). In consideration of the measurement of happiness, it can be inferred that medicinal properties facilitate the production of positive psychological affect, thus that humor could have direct associations with the facilitation of happiness.

This study would benefit from an increased range of participants, such as individuals from campuses of variable political and religious affiliations, participants of a more varied age range, or participants of majors outside of psychology. Additionally, limiting the sample to individuals from a university could detract from the results of the study as it limits the participants to students. Liberty University being a primarily conservative private institution may have limited the study as well, in that individuals attending the school may identify with a censored version of modern-day humor. This could be attributed to the environment these individuals were raised in, such as religious settings in which negative styles of humor may be

frowned upon as vulgar or excessive. Stigmatization of such humor within the sample may have affected the results of the study, in that individuals may have been less likely to engage in negative humor which could have indicated lower level of happiness. Although these factors could detract from the generalizability of the study, this information could serve as a pilot study or springboard for future research regarding associations between style of humor and overall levels of happiness. If this study were to be replicated, it should use a diverse population of adolescents, not limited to sampling from college or university campuses. If replicated within a university setting, it would be beneficial to sample students from public universities with mixed religious or political affiliations. Individuals who were not raised in contexts where the use of certain humor was frowned upon may be more likely to engage in negative styles of humor, which may have more implications for indication of levels of happiness.

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Figure 1

Scatterplot of Relationship Between OHQ Scores and Affiliative Humor Scores (HSQ)

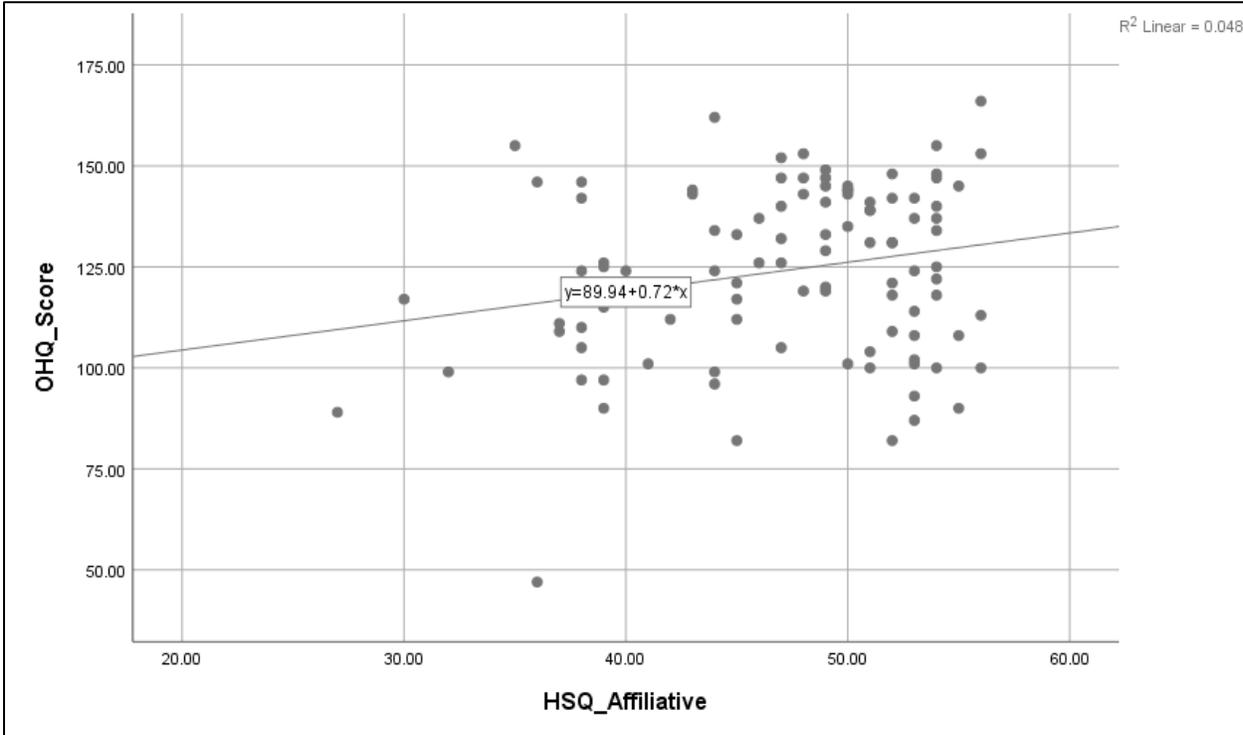


Figure 2

Scatterplot of Relationship Between OHQ Scores and Self-Enhancing Humor Scores (HSQ)

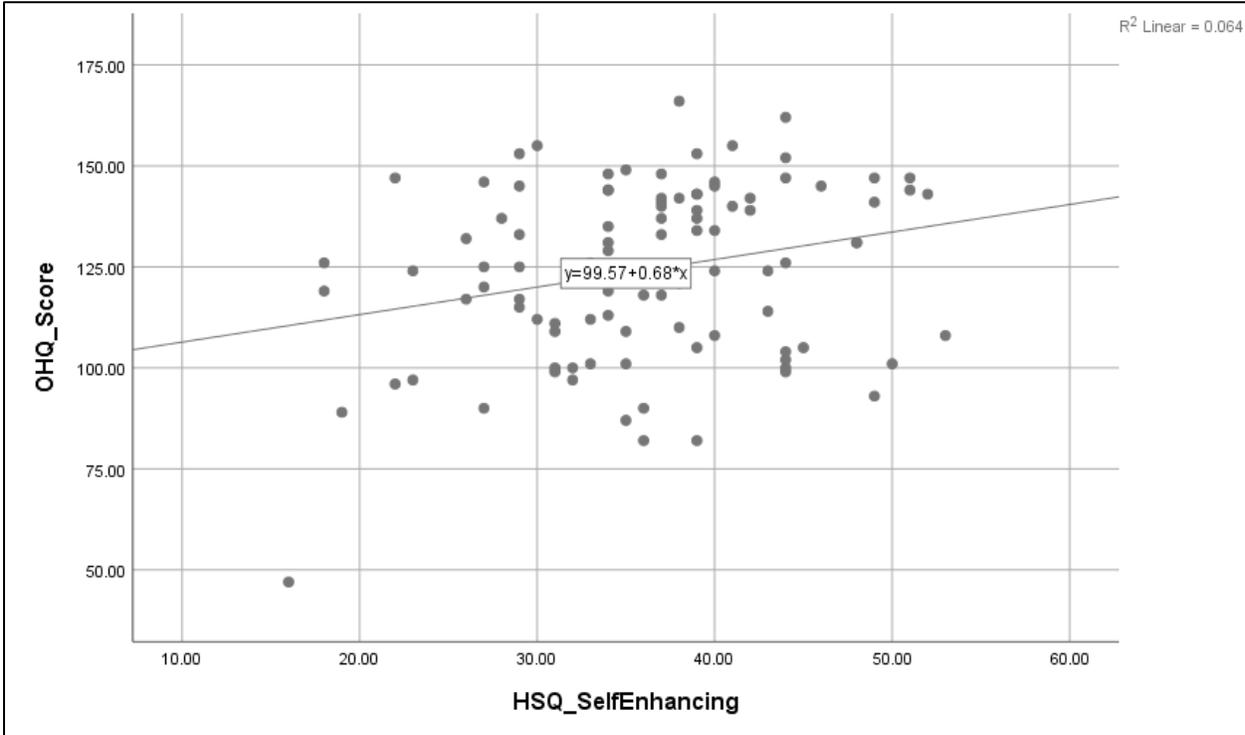


Figure 3

Scatterplot of Relationship Between OHQ Scores and Aggressive Humor Scores (HSQ)

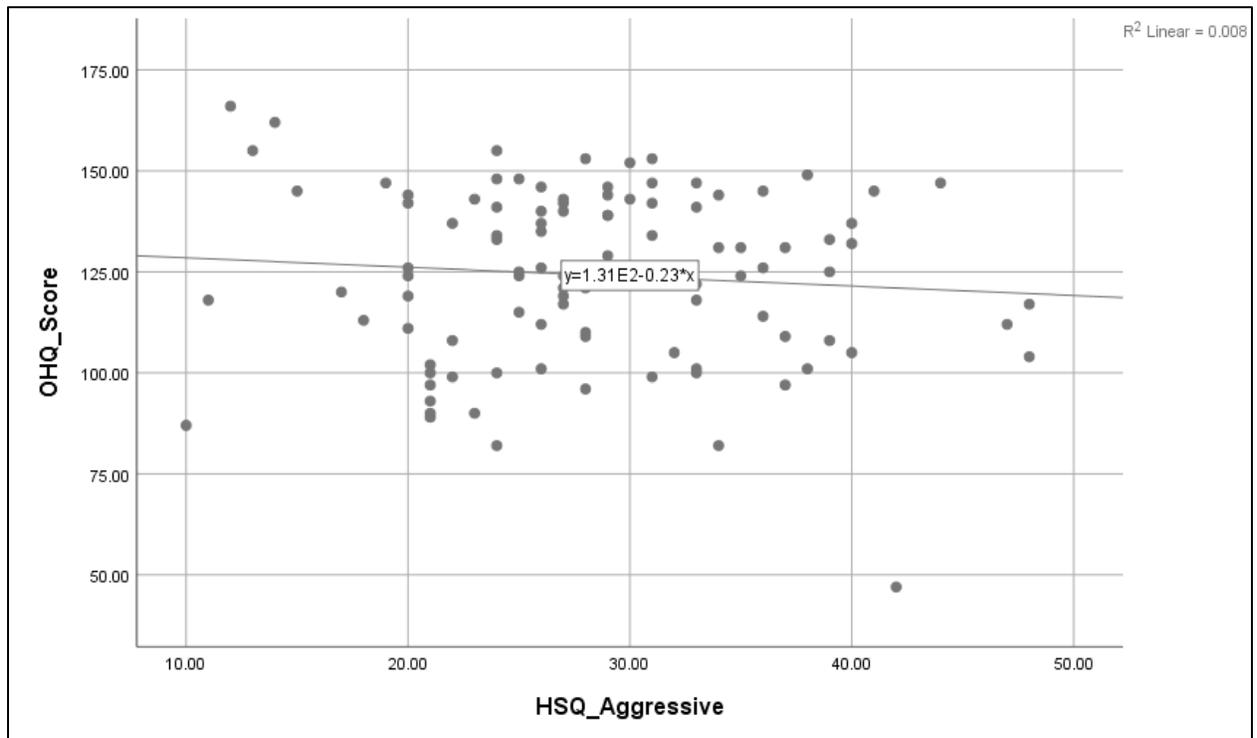


Figure 4

Scatterplot of Relationship Between OHQ Scores and Self-Defeating Humor Scores (HSQ)

