IN SEARCH OF HOMO HUMORUS: PERSONALITY, HEALTH, HUMOR STYLES AND HUMOR AS A MENTAL FITNESS INDICATOR IN STAND-UP COMDIANS AND THE REST OF US

BY

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DISSERTATION

Submitted in Partial Fulfillment of the
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ABSTRACT

There is mounting evidence that humor production and appreciation are a product of our evolutionary history. The purpose of this study was to explore how people use and enjoy humor based on principles from evolutionary psychology and behavioral ecology. More specifically, the study investigates if sexual selection played a role in shaping humor production as a mental fitness indicator of intelligence, and if principles from life history theory can explain why stand-up comedians pursue humor as a career.

A sample of 400 students (200 males, 200 females), 31 professional comedians, nine amateur comedians and 10 humor writers, participated in the study. They completed a demographic questionnaire, early experiences inventory, health questionnaire, the Big

Five personality traits (NEOFFI-R), Humor Styles Questionnaire (HSQ), Parental Bonding Instrument (PBI), Multidimensional Aptitude Battery (MAB), Advanced Progressive Matrices (RAPM), Sociosexual Orientation Inventory (SOI), Sexual Behaviors and Beliefs Questionnaire, and humor production task that included writing captions to cartoons whose captions were removed.

The results showed that, on average, comedians were funnier than students, and males were funnier than females. Humor production correlated with intelligence for the students' sample but not for the comedians' sample. The correlation between humor production and each intelligence test was stronger for males. Individuals with good sense of humor were also more likely to enjoy mating success, suggesting that humor production is in fact a mental fitness indicator.

Compared to the students, comedians showed significantly higher openness, and lower conscientiousness, extraversion, and agreeableness. Comedians also had distinct humor styles that could predict their on stage success, and reported fewer contagious diseases. Comedians were not different than students in their relationship with their parents, but were more likely to have been the class clown, make fun of themselves and others, and be the butt of the joke during adolescence.

The findings suggest that humor does serve as a mental fitness indicator for ordinary people, but for comedians, humor may be a strategic choice. Comedians might use humor as a tradeoff, compensating for undesired traits such as low status. These diverse uses of humor shed further light on the complexity and multidimensionality of humor.

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CHAPTER 1: INTRODUCTION

Humor surrounds us in every aspect of our lives. We laugh, smile, tell jokes, watch comedies on TV and the big screen, go to comedy clubs, read the cartoons in the newspaper, and so on. Humor interlaces with our daily activities very naturally, so much so that most people do not realize what an important part it plays in their lives. In a sense we can say that humor defines us as human.

Historically, most researchers have ignored humor, perhaps thinking humor is so simplistic there is not much to study. In recent years, more and more researchers from numerous disciplines have started taking humor seriously, and the picture they revealed is far more fascinating than they could have imagined. Humor is a more complex phenomenon than was thought before, and with much variation between people and groups. In fact, sense of humor is a multidimensional construct that involves cognitive, behavioral, developmental, emotional, cultural and biological facets, and can be seen as a personality trait, an habitual behavior, a temperament, an ability, or an attitude (Martin, 2003; R. A. Martin, 2007; Ruch, 2004, 1998).

There is no agreed definition of humor among researchers or laypersons, and the humor construct probably contains loosely related phenomena. However, researchers agree that humor is universal, and mechanisms such as surprise, incongruity, and non-serious social interactions seem to elicit laughter and the emotion of mirth across cultures (Apte, 1985; Gervais & Wilson, 2005; R. A. Martin, 2007; McGhee, 1979). In addition, smiling and laughter have been documented not only in all human societies, but also in other primates, especially chimpanzees (Gamble, 2001; Preuschoft & Van-Hooff, 1997; Van-Hooff & Preuschoft, 2003; Waller & Dunbar, 2005), supporting the idea that humor

is well rooted in our evolutionary history. The silent bared teeth display in apes is considered to be homologous to the human smile, whereas the relaxed open mouth display is homologous to human laughter. The silent bared teeth display appears as a sign of submissive appeasement, while the relaxed open mouth display appears in social play as a sign of enjoyment. While these two displays are quite distinct in apes and emerge only in specific situations, they seem to converge in humans. Humans smile and laugh in response to the same stimuli, though the smile or laughter reflect the magnitude of joy, not the nature of the interaction as with apes (Ruch, 1993). Other support for the evolutionary origin of humor and laughter comes from its early onset, the fact that laughter is a spontaneous and stereotypical vocalization, and most recently with the finding of specific neurological circuits that play a role both in production and appreciation of humor (Coulson & Williams, 2005; Gervais & Wilson, 2005; Moran, Wig, Jr., Janata, & Kelley, 2004; Weisfeld, 1993). Therefore, it is likely that humor production and humor appreciation played an important role throughout our evolutionary history (Apte, 1985; Eibl-Eibesfeldt, 1989).

Several evolutionary explanations for humor production and humor appreciation have been offered over the years (e.g., Alexander, 1986; Gervais & Wilson, 2005; Miller, 2000a; Ramachandran, 1998; Weisfeld, 1993). These theories vary in scope; they illuminate different facets of humor and laughter. Since there is no consensual definition of humor, and since what people find funny, and the types of humor they produce is inevitably influenced by culture as well, these theories will necessarily be partial to varying extents. However, unlike cultural explanations that might be local or proximate, an evolutionary explanation of humor should be ultimate, even if different evolutionary

processes on different evolutionary timeframes are involved in creating and developing laughter and humor. Thus, evolutionary approaches to humor should be synthesized in such a way that a unified explanation of why people produce humor, what types of humor they use, and why and what other people find funny, emerges (even if it is a multi-level or multi-functional one). Unfortunately, many of these theories tend to ignore other evolutionary explanations and theories from other fields that could supplement their argument (e.g., positive psychology, neurobiology, and play studies). These explanations tend to focus on partial and selective data that support the theory and ignore findings from other fields that do not. For example, when looking at laughter as a circuit breaker, a mechanism that conveys the message that there is no threat and there is nothing to worry about (Chafe, 1987; Ramachandran, 1998), it is important to account for the emotional feeling of mirth that people have following the humorous stimulus.

In my study, I focus on both humor production and humor appreciation, since both things need to be explained to fully understand the phenomenon of humor. There are many situations in which people produce and appreciate humor. When we postulate a general theory about humor, we have to consider the benefits that humor yields for both the producer and the appreciator. Perhaps, the person who produces the humor signals something that is valuable to the appreciator. The key for any theory about humor is to understand what the humor stimulus conveys in its message about the producer, why it makes the appreciator smile or laugh, and how laughter or smile yields fitness benefits to the producer.

One line of research that comprises my study considers humor production as a mental fitness indicator. Mental fitness indicators emerged in a co-evolution between

men and women and may have been one of the most important driving forces in sexual selection in humans. For example, men who are more creative, more intelligent, or have higher artistic abilities are more desired by women as mates (Miller, 2000a). We can expect that these mental fitness indicators will reflect certain underlying dimensions of phenotypic condition and/or genetic quality. Some studies suggest that mental fitness indicators are indeed correlated with underlying genetic quality, and what makes them unique is the difficulty of faking them if one does not possess a certain level of cognitive ability and neurodevelopmental stability (Prokosch, Yeo, & Miller, 2005).

Sense of humor is an excellent example of a trait that is desired by both sexes, yet it seems to play a different role for men and women. At least in short-term mating and initially in long-term courtship, women tend to like a man who will make them laugh, while men want a women who will laugh at their humor (Bressler, Martin, & Balshine, 2006). The fact that people vary largely in the quality of the humor they produce, that other people can assess this quality, and that humor production also correlates with other cognitive abilities, such as some aspects of creativity (O'Quin & Derks, 1997), makes humor a good candidate for a mental indicator. In this research, I attempt to investigate not only how humor can serve as a mental indicator, but also how humor production can translate into mating success.

Another line of my research relies on ideas from human behavioral ecology in the context of life-history theory. One of the most important concepts in life-history theory is the notion of tradeoffs (Hill & Hurtado, 1996; Kaplan & Gangestad, 2005). Individuals have to allocate their resources wisely so they can optimize fitness. Common tradeoffs studied from the life-history perspective include: number vs. quality of

offspring, current vs. future reproduction, and parenting vs. mating effort. Optimal strategies given each of these tradeoffs depend on the qualities of the individual and on the current environment. Many possible tradeoffs emerge in the context of sexual selection, especially because of the different life-histories of males and females (Buss, 2003; Miller, 2000a). For example, if men especially value physical attractiveness, youthfulness, and fidelity, and women value status, kindness, and intelligence, we can expect that members of the other sex will attempt to excel in the desired traits, maximizing their mate value. Of course, not everyone can do it to the same extent, and the individual differences among people create different sexual display strategies. In addition, people have constraints on the ways they can advertise their desired traits, and are limited in their ability to express certain behaviors based on the environment in which they live. For example, women can manipulate their beauty to some extent, but those who are naturally attractive have a clear advantage. It is likely that less attractive women will try to invest in other traits (e.g. fidelity) to increase their desirability.

Sense of humor is a good example of a trait that is relatively flexible, depending on individual differences and circumstances. Like other mental traits that serve as fitness indicators, sense of humor can be made more impressive through development of culture-specific skills. It is possible that unlike many other desired qualities, such as physical attractiveness, people can improve their humor production through practice and experience. That might be analogous to men with low mate quality who make a conscious decision to invest in parental care to increase their mate value. In other words, people may use humor spontaneously or choose to use it strategically, in the course of their lives.

Mental indicator theory and life-history theory are complementary to each other. Some types of humor in certain situations, for some people, might be used as a mental indicator; other types of humor may serve different functions. The use of humor can also be related to other desired traits in the opposite sex. Knowing how to tell the right joke at the right time involves intelligence, creativity, articulation, sensitivity, paying attention to group and individual norms, knowing how to interpret individual and social cues, and knowing when it is appropriate to laugh and when it is not. All of these traits are usually desired in a potential mate. Focusing on both individual differences and life-history tradeoffs can shed light on why and how people use humor and the evolutionary pressures that may have shaped humor production and humor appreciation.

To assess these possible myriad functions of humor, I recruited four samples. First, college students that represent people with average humor ability and everyday use of humor (but slightly higher than average IQ, so perhaps slightly better than average humor production ability). Students are also suitable to test hypotheses related to sexual selection theory, because they are in the peak of their reproductive years, when the competition over mates is in its prime.

A second sample consisted of professional comedians. Professional stand-up comedians represent one extreme of humor production, and by no means represent the whole population. They do not represent mundane occurrences of humor and laughter, but rather exemplify an exaggerated form of public humor. Just as the study of homicides can illuminate general patterns of human conflict, the study of professional stand up comedy may illuminate general patterns of humor (Daly & Wilson, 1988). Social scientists have been quite negligent in failing to study stand-up comedians. There

are several studies on other performing artists such as musicians, actors, and dancers (Chakravarti & Chattopadhyay, 2006; Fitzgerald, 1999; Kogan, 2002; Nettle, 2006), but only a few have looked at comedians as a separate group (Fisher & Fisher, 1981; Janus, 1975; Janus, Bess, & Janus, 1978). In fact, there have not been empirical studies on professional comedians for decades, and little is known about modern comedians. This study is one step toward filling this gap.

One basic question explored in this study is whether professional comedians' personalities are different from those who are not comedians. Another question is: Are their humor styles and the ability to create spontaneous humor similar to those of others? Another part of the study aims to investigate why stand-up comedians chose comedy as a career. Did it come at the expense of other opportunities? Do comedians' life-histories lead them to choose comedy as an alternative mating strategy or life-history strategy, and to develop their humor skills because they lack some other desired traits? If humor is a mental fitness indicator, does it serve the same function for comedians as for other people?

Two other groups were recruited as additional controls: amateur comedians and humor writers. Amateur comedians represent the first stage in the life of professional comedians and it is important to see if there are any differences between the two groups. Most amateur comedians will not become professional, and studying people in this amateur status can give us valuable information about why people want to become comedians, and what it takes to succeed. The purpose of including humor writers is to compare comedians to a group of people who write humor but do not perform it. It is possible that the comedians might be different from other people just because they deal

with humor as their profession, and not because of the unique characteristics of their personalities. Sampling humor writers will allow us to control for some shared aspect of humor production that professional comedians have.

CHAPTER 2: THE BIG FIVE PERSONALITY TRAITS OF PROFESSIONAL COMEDIANS COMPARED TO AMATEUR COMEDIANS, COMEDY WRITERS, AND COLLEGE STUDENTS

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Abstract

Stand-up comedians are a vocational group with unique characteristics: unlike most other entertainers with high creative abilities, they both invent and perform their own work, and audience feedback (laughter or derision) is instantaneous. In this study, the Big Five personality traits (NEOFFI-R) of 31 professional stand-up comedians were compared to those of 9 amateur comedians, 10 humor writers and 400 college students. All four groups showed similar neuroticism levels. Professional stand-up comedians were similar to amateur stand-up comedians in most respects. However, compared to college students, professional and amateur stand-up comedians on average showed significantly higher openness, and lower conscientiousness, extraversion, and agreeableness. Compared to stand-up comedians, comedy writers showed higher openness, conscientiousness, extraversion, and agreeableness. These results challenge the stereotype of comedians as neurotic extraverts, and suggest a discrepancy between their stage persona and their true personality traits.

2.1. Introduction

Comic performers such as jesters, clowns, and story-tellers have always been popular throughout history and across cultures (Apte, 1985; Nilsen & Nilsen, 2000). In the modern U.S., live comic performers usually do stand-up comedy, which developed from the American traditions of burlesque and vaudeville, and featured slapstick humor, clowning, impressions, and ridicule (Nilsen & Nilsen, 2000; Wickberg, 1998). Stand-up comedy increased in scale and sophistication throughout the twentieth century to become a popular form of entertainment in the past fifty years. It now represents the most competitive, public, high-risk, high-gain form of that distinctively human trait – the capacity for verbal humor.

Psychologists have been quite negligent studying stand-up comedians. While there are several studies on other performing artists such as musicians, actors, and dancers (Chakravarti & Chattopadhyay, 2006; Fitzgerald, 1999; Kogan, 2002; Nettle, 2006), only a few have looked at comedians as a separate group (Fisher & Fisher, 1981; Janus, 1975; Janus et al., 1978). This neglect may reflect psychologists' bias to study 'serious' forms of creativity, as in the many studies of mathematicians, chess players, architects, visual artists and scientists (Burch, Pavelis, Hemsley, & Corr, 2006; Katz, 1986; Kogan, 2002; Milgram, Livne, Kaufman, & Baer, 2005). Comedians have become increasingly popular in both the media and in comedy clubs, which warrants a special interest in them.

The scientific inquiry of humor can also benefit largely by studying stand-up comedians not only because they are popular but also because they can illuminate some aspects of humor production and appreciation. Although the highly practiced and

ritualized stand-up comedy performances do not reflect the typically informal, mundane situations in which more social humor occurs (Provine, 2000), stand-up comedy can highlight some important aspects of humor, just as the study of homicides can demonstrate general patterns of human conflict (Daly & Wilson, 1988), and the study of tipping lap dancers at gentleman clubs can illustrate some aspects of human sexuality (Miller, Tybur, & Jordan, 2007). Comedians must make other people laugh to succeed in their profession, and this can reveal interesting facets of when and why people laugh, as well as what characterizes individuals who are considered by many to be funny. Since comedians tell hundreds of jokes in one show in front of a live audience, they can learn immediately what is funny and what is not.

Because stand-up comedy is a tough, competitive business that requires years of traveling from city to city in relative poverty, obscurity, and insecurity, professionally successful comedians may have special characteristics that allow them to thrive in their chosen careers. Many people try to become professional comedians but few succeed in making a living at it. Unlike actors and musicians, stand-up comedians have no union to support and protect them, no specialized education system (such as the M.F.A.) to train them, and no highly publicized awards (such as Oscars or Grammys) to recognize their achievements. They must develop their own publicity, bookings, reputations, and careers through traveling most of the year from one comedy club to the next.

Very little is known about stand-up comedians' lives, and especially about their personalities. Taking a psychoanalytical approach and based on projective tests such as Machover Human Figure Drawing, early memories recollection, and analyses of dreams, Janus concluded that comedians are sad, depressive, despondent, and angry (Janus, 1975;

Janus et al., 1978). Based on Janus' interpretations, male comedians tended to show bipolar disorder and be introverted, while female comedians tended to be vivacious, frenetic and hypomanic. However, since these studies used controversial methods, it is hard to arrive at firm conclusions.

Fisher & Fisher (1981) conducted a more thorough study on the lives of nationally known comic people (28 professional comedians and 15 circus clowns). Compared to other famous actors, the comics showed more references to good and evil themes as found in a Rorschach inkblot test. The comics also differed from the actors in their lower perception of self-worth. Comics were more likely to make negative remarks about themselves compared to the actors, and to view themselves as small as measured in the Thematic Apperception Test (TAT).

Both Janus and Fisher & Fisher relied heavily on a psychoanalytical approach and methods that are somewhat dated, open to subjective interpretations and of questionable validity (e.g. Wood, Nezworski, Garb, & Lilienfeld, 2001; Wood, Nezworski, Lilienfeld, & Garb, 2003). Moreover, the comedy scene has become much larger, more sophisticated, and more competitive in the 30 years since these studies were conducted. Comedy clubs used to be scarce, with relatively few full time comedians. Today, there are more than 200 comedy clubs in the US alone and probably thousands of professional comedians.

Comedians may share some personality characteristics with other groups showing unique or extreme abilities. Kogan (2002) makes the distinction between creators and interpreters. Creators such as writers, composers and choreographers produce new works of culture, while actors, musicians and dancers perform and interpret those creative

works. Stand-up comedians are one of the few groups that both create and perform their own new material (others include singer-songwriters, slam poetry performers, and speakers at academic conferences). They write their own material (using other comedians' material is considered a serious ethical violation and can lead to suspension from comedy clubs), but they also perform it in front of an audience. They have the freedom to interpret and vary their own jokes as much as they want, and refine them through endless comedy shows. Thus, comedians may be similar to both creators and performers in some aspects but not others.

Comedians' abilities to make other people laugh (at least in the narrow sense of performing in front of an audience) is partially a demonstration of their creativity (Kaufman, Kozbelt, Bromley, Geher, & Miller, 2008; O'Quin & Derks, 1997) and therefore might be similar to other creative people. Studies have shown that creative people such as writers and poets tend to be high on the five factor dimensions of neuroticism and openness, and low on conscientiousness, compared to control groups (Nowakowska, Strong, Santosa, Wang, & Ketter, 2005).

While writers and poets share with comedians the creative aspect of their lives, they do not present or perform their materials as comedians do. Poets and writers occasionally read their material in public, but it is not essential for their success. Playwrights and screenwriters rarely act in their plays or films. Stand-up comedians, on the other hand, must perform their act in front of a live audience to succeed as comedians, and therefore become much more visible public figures. Most comedians also want to be famous, and that separates them from many other creative people who usually stay

'behind the scenes' but this makes them more similar to other performers, especially actors.

Previous studies found that actors scored high on extraversion, openness to experience and agreeableness compared to the general population (Nettle, 2006). High extraversion among actors is associated with their desire for being the center of social attention and getting the love of the audiences, something they might have in common with comedians (Nettle, 2006). High agreeableness relates to their ability to be sensitive towards others' needs, compassionate and cooperative. As public figures, actors, as well as politicians, tend to be high on this dimension (Caprara, Barbaranelli, Consiglio, Picconi, & Zimbardo, 2003). Comedians do want to be loved and appreciated; however, they often tend to be ideologically provocative and verbally aggressive on stage, which may be perceived as hostile. Actors, like writers and poets, are high on openness to experience, something that is common among all artists (Nowakowska et al., 2005).

The purpose of this study is to explore the personality characteristics of comedians based on a Big Five personality scale (The NEO-FFI-R). The creative writing part of their work, which is similar to the works of poets and writers, suggests that comedians will be high on neuroticism and low on conscientiousness (insofar as impulsivity, lateral thinking, and disinhibition help in writing new comic material). Comedians' quest for attention, fame and recognition should place them high on extraversion, similar to actors. Because comedians tune their act to the audiences' reaction and want to be liked, we might expect them to be high on agreeableness, but because comedy often requires derogation of other people, personalities, ideas, and habits, comedians might score low on agreeableness. Comedians should also score high

on the Big Five factor dimension of openness to experience, as most artists and performers tend to do.

Since comedians write their own material and also interpret and perform it on stage, it is important to control for each of these intertwined acts. Therefore, in addition to comparing comedians to a sample of people who do not create or perform any humor related material, comedians were also compared to a sample of people who specialize in writing comedy. These writers may occasionally perform the material they write, but their main work and motivation is to write comedy. Lastly, comedians were compared to a sample of aspiring comedians, people who are amateurs in comedy who are making their first steps into the business. It is expected that this group will generally be similar to professional stand-up comedians (although less extreme), and the two groups might be seen on one continuum of being a stand-up comedian.

2.2. Method

2.2.1. Participants

Both professional and amateur comedians were recruited through a local comedy club. The club hosts between one and three professional comedians every week, who perform for several nights in a row. The professional comedians come from all over the United States and do not return to perform at the same club for several months. Amateur comedians, who are mostly local, perform for free once a week before the main act, and may return as many times as they wish to develop their comedy skills. In total, 31 professional comedians (28 males, 3 females, mean age = 38.9, SD = 8.0) and 9 amateur

comedians (8 males, 1 female, mean age = 31.6, SD = 9.9) participated in the study.

Four hundred undergraduates enrolled in psychology courses at the University of New Mexico also participated in the study. The 200 female participants (mean age = 20.0 years, SD = 3.9) and 200 male participants (mean age = 21.1, SD = 5.7) received partial course credit for participation. UNM is a large state university with a diverse population, including minorities and nontraditional students.

Ten other individuals whose work is humor-related but who are not stand-up comedians participated in the study (6 males, 4 females, mean age = 20.5, SD = 4.9). Most of those participants are involved in writing and directing comedy for movies, plays, and sketch comedy. Writers were recruited in two ways. Some participants were contacted through personal web pages or social networking websites such as Facebook or Myspace. Others were recruited using snowball sampling.

2.2.2 Procedures

Professional and amateur comedians were recruited individually by approaching them personally at the comedy club after they performed. A meeting on a later day was scheduled for those who agreed to participate in the study. Meetings were held in a coffee shop during the day, while the comedians were off work. All comedians signed informed consent before participating and were debriefed after they completed the questionnaires. Writers were contacted individually by the author and meetings were held on similar terms as with the comedians. Up to 15 students sat in a classroom and completed the questionnaires.

2.2.3 Materials

Participants completed a short demographic inventory and the NEO-FFI-R survey (Costa & McCrae, 1992) of the "Big Five" personality scale (openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism). Participants rated themselves on 60 items using a seven-point Likert scale, from 1 (Strongly Disagree,) to 7 (Strongly Agree). All five personality dimensions had high internal consistency scores (Cronbach's α: Openness to experience: 0.80; Conscientiousness: 0.83; Extraversion: 0.77; Agreeableness: 0.75; neuroticism: 0.84).

2.3. Results

Because the sample of amateur comedians and writers was relatively small, the assumption of normality for each group on all five dimensions of the Big Five was examined using normal probability plots. Plots reveal no apparent deviations from normality, so Levene's Homogeneity of Variance Test was conducted. Results for all dimensions of the Big Five showed that the variances of all four groups are not different from each other (Openness to experience: $F(3, 443) = 1.37$, $p = 0.25$; Conscientiousness: $F(3, 443) = 0.92$, $p = 0.43$; Extraversion: $F(3, 443) = 0.55$, $p = 0.64$; Agreeableness: $F(3, 443) = 0.70$, $p = 0.55$; neuroticism: $F(3, 443) = 0.93$, $p = 0.42$). Therefore, it was appropriate to continue with the ANOVA.

Table 2.1 shows the comparisons among the students group (students), professional comedians, amateur comedians and writers on the Big Five personality scale using ANOVA. The sample of comedians and writers mostly includes male participants.

Therefore, the results are displayed separately for the overall samples and for male participants only.

For the overall data, there were significant group differences for openness to experience, conscientiousness, and extraversion, and marginally significant differences for agreeableness. For male participants, we found significant group differences for openness to experience and conscientiousness and marginally significant differences for extraversion.

Table 2.1

Comparisons among students, professional comedians, amateur comedians, and comedy writers

		Students		Professional Comedians		Amateur Comedians		Humor Writers		F
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	
O	All	60.28	10.43	65.06	9.41	64.88	7.55	73.10	6.88	7.27****
	M	60.05	10.97	64.77	9.25	64.87	8.07	71.66	6.88	4.01***
C	All	58.66	10.49	55.12	11.96	51.33	10.17	61.00	9.68	2.60**
	M	57.64	10.64	54.92	11.86	50.37	10.43	62.50	7.14	2.10*
E	All	60.77	9.81	55.90	10.31	58.77	8.65	62.90	6.29	2.67**
	M	60.47	9.49	55.35	10.34	59.25	9.13	61.50	7.91	2.41*
A	All	53.34	10.56	50.80	11.09	50.11	9.51	59.70	8.79	2.08*
	M	51.40	9.89	50.71	11.17	50.62	10.04	57.50	8.71	0.80
N	All	44.02	12.30	43.48	12.28	42.55	10.32	44.20	17.13	0.06
	M	42.80	12.68	42.85	11.96	44.25	9.60	40.83	19.96	0.08

O: openness to experience, C: conscientiousness, E: extraversion, A: agreeableness, N: neuroticism.

* $p < 0.1$.

** $p < 0.05$.

*** $p < 0.01$.

**** $p < 0.001$.

To further explore the nature of the differences among the groups, we calculated Cohen's d effect sizes for the difference scores on each of the Big Five dimensions between professional comedians and the other groups (Cohen, 1988). These results are

presented in Table 2.2**,** along with the significance levels of the planned comparisons between professional comedians and each of the other three groups using ANOVA contrasts. Typically in psychological research, effect sizes are divided into three general categories: small (d =0 .2), medium (d = 0.5) and large (d = 0.8).

The table shows that for the overall sample, professional comedians scored higher than the students group on openness to experience but lower on that dimension than the comedy writers. Professional comedians scored lower than both the students group and the writers on the extraversion dimension, and also lower than the writers on the agreeableness dimension of the Big Five. Also, comparing only male subjects, professional comedians scored higher than the students group on the openness to experience dimension and lower on the extraversion dimension.

Table 2.2

Pair-wise comparisons and effect sizes between professional comedians and all three other groups on each of the five dimensions of the Big Five

		Students	Amateurs	Writers
O	All	0.47**	0.02	-0.98**
	M	0.44**	-0.01	-0.85
C	All	-0.32*	0.34	-0.54
	M	-0.25	0.41	-0.77*
E	All	-0.48***	-0.30	-0.82**
	M	-0.45***	-0.40	-0.67
A	All	-0.26	0.07	-0.89**
	M	-0.10	0.01	-0.68
N	All	-0.04	0.08	-0.05
	M	-0.01	-0.13	0.12

O: openness to experience, C: conscientiousness, E: extraversion, A: agreeableness, N: neuroticism. Cohen's d is pair-wise comparisons between professional comedians and students group, amateur comedians, and comedy writers. Positive effect size denotes that professional comedians scored higher than the comparison group.

* $p < 0.1$.

** $p < 0.05$.

*** $p < 0.01$.

2.4. Discussion

The purpose of this study was to examine the personality characteristics of professional stand-up comedians and compare them to other groups involved in humor production at various levels. The data for this study show that professional comedians are a vocational group with personality characteristics that distinguish them from other professional groups, as well as from the control group. Professional comedians are higher on openness to experience, compared to the sample of college students, but lower than comedy writers. Professional comedians are also relatively low on conscientiousness, extraversion and agreeableness compared to students and comedy writers.

As predicted, comedians are more open to experiences than the average population. Stand-up comedy requires a fresh and innovative look at things around us and staying in tune with popular culture developments that interest their audience. This is consistent with previous studies that showed that other creative groups such as poets and writers, and performers such as actors tend to be high on openness as well (Nettle, 2006; Nowakowska et al., 2005). Comedy writers in the current study scored significantly higher than comedians on openness, suggesting that openness is most crucial for writing. Writers and poets devote most of their time to writing, while for comedians writing is essential but not exclusive to their act, and they have to divide their time between writing, practicing and performing.

Comedians, like other creative people, are also low on conscientiousness (Nowakowska et al., 2005). Previous studies that look at the relationship between conscientiousness and sense of humor found that people who were low on

conscientiousness tended to have negative styles of humor (Greengross & Miller, 2008; Martin, Puhlik-Doris, Larsen, Gray, & Weir, 2003). These humor styles involve using humor to disparage others and creating and enjoying hostile and aggressive humor, including at the expense of the presenter in the form of self-deprecating humor. Comedians' performances are often perceived as vulgar and crude, especially in comedy clubs, where there are no restrictions on the language they can use. Comedians also frequently use aggressive humor that is directed either toward the audience or themselves. Although conscientiousness is required for success in stand-up comedy – one must show up on time, book travel arrangements effectively, pursue publicity opportunities, etc – it may be more important on balance to have the impulsive disinhibition necessary to think of weird new ideas that are funny, and to violate social norms by saying certain things in public.

Perhaps the most surprising finding was that comedians are more introverted than other people. We might expect comedians' pursuit of fame and attention to place them high on extraversion, like actors (Nettle, 2006). The result may suggest that comedians do not seek fame the same way as actors. The public perceives comedians as ostentatious and flashy. Their persona on stage is often mistakenly seen as their real personality, and the jokes they tell about their lives are considered by many to have a grain of truth in them. However, the results of this study suggest that the opposite is true. Perhaps comedians use their performance to disguise who they are in their daily life. Comedians may portray someone they want to be, or perhaps their act is a way to defy the personality constraints imposed on their everyday events and interactions with others. Further study

needs to be done to clarify the apparent contradiction between their true personality and on stage persona that they choose to present.

The data show that comedians were slightly low on agreeableness, especially compared to writers. High agreeableness is associate with other groups such as actors and politicians, and may relate to their desire to be loved by their respective audiences (Caprara et al., 2003; Nettle, 2006). We might expect the interaction between comedians and their audience would cause them to be sensitive to their reaction, in an attempt to make them laugh, the ultimate sign of audiences' love. However, as with their extraverted personality on stage, this expectation does not represent their real tendency to be less cooperative and more suspicious in real life. Most of comedians' work is writing and practicing their performance before they go on stage. This kind of work is highly individual and secretive and comedians can be suspicious that others may steal their material. Stand-up comedy is a very competitive business and often involves derogating the work of other comedians, which can explain why they are low on agreeableness. More generally, high-agreeableness people tend to be conformist, placid, and kind-hearted – not good at derogation, mockery, or telling brutal but funny truths. Great comedy requires a nasty streak that pushes people out of their comfort zone.

There were no differences among the groups on neuroticism. Creative people such as poets and writers are usually high on this dimension, but they do not have to perform their creation on stage (Nowakowska et al., 2005). Comedians, on the other hand, may need to have strong emotional stability (the opposite of neuroticism) in order to control their on-stage performance, just like people who engage in extreme sports, such as alpinists and mountaineers have to control their anxiety (Goma-Freixanet, 1991).

These myriad and contradictory parts of their work may result in average neuroticism for comedians. This moderate level of neuroticism places them on a similar level to actors. Emotional stability (the opposite of neuroticism) is important in succeeding as a stand-up comedian. Comedians need emotional stability to persist despite failure, maintain a positive attitude while traveling alone for months on end, keep their composure when facing hecklers, and negotiate their bookings with club managers.

The results of this study demonstrate the uniqueness of stand-up comedians in comparison to other vocational groups or performers, as well as to a control group of university students. As both creators and performers they share some characteristics with other creators and performers, but are also distinct from each one of them. For example, comedians, unlike writers, know they are going to perform on stage, while writers usually do not perform their verbal creation. Comedians can also almost immediately see the results of their writing effort and adjust it appropriately. Writers' work is much less flexible than that of the comedians, whose stand-up comedy performance could change on a daily basis due to their interactions with the audience. Actors and other performing artists can do that to some degree, but they do not have the flexibility to change their act that comedians have. Comedians' performances differ from those of other performers in the sense that the interaction with the audience is the key to their success in every show. Not only do they get instant feedback from the audience, but they also can refine and adjust their act, and that adjustment is crucial for their on stage survival.

It is to be noted that professional comedians did not differ from amateur comedians. To some extent, it is possible to see both groups on one continuum. Amateur comedians could become professionals in the future, and what separates them from

professional comedians is mainly their lack of experience. However, no amateur comedian is guaranteed a career in comedy, and many of them are unproven comics who will not succeed. The relatively small sample size of amateur comedians may limit our ability to find distinct differences between them and professional comedians and warrant additional studies.

Further research could explore the differences between comedians and other groups in an effort to illuminate aspects of their work that can highlight the similarities and differences among the groups. One limitation of this study is that the comedians were significantly older than other groups, especially the college students. Personality is a complex phenomena, which continues to develop through young adulthood (Robins, Fraley, Roberts, & Trzesniewski, 2001; Srivastava, John, Gosling, & Potter, 2003).

However, numerous studies have shown that the Big Five personality traits tend to be stable over the lifetime of an individual, especially for extraversion and openness (Bazana, Stelmack, & Stelmack, 2004; Hampson & Goldberg, 2006; Soldz & Vaillant, 1999). Another limitation is the low number of female comedians. No other vocational group seems to exhibit such sex differences in participation as stand-up comedy, and it is important to study these differences in the future to understand and elucidate sex differences in stand-up comedy and the role of women in the creative and performing arts.

CHAPTER 3: WHAT FUNNY PEOPLE FIND FUNNY: HOW STAND-UP COMEDIANS' HUMOR STYLES RELATE TO PERSONALITY AND ON STAGE SUCCESS

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Key words: Humor, Stand-up Comedy, Humor Styles Questionnaire, Personality, Big Five

Abstract

This study explores the humor styles of professional stand-up comedians, the relationship between humor styles and personality, and how humor styles influence on-stage success. Thirty one comedians were compared to a sample of 400 students on the Humor Styles Questionnaire (HSQ), and on the Big Five personality traits (NEO-FFI-R). Results show that comedians scored higher than students on each of the four styles of humor: affiliative, self-enhancing, aggressive and self-defeating. There were only two significant correlations between HSQ and the Big Five for comedians: affiliative humor was positively correlated with openness and agreeableness. Affiliative humor positively predicted, and self-defeating humor negatively predicted, the number of weeks comedians perform in a year. Results suggest that comedians may have distinct humor styles compared to others and also in comparison to their on-stage humor use.

3.1 Introduction

Professional stand up comedians are a unique vocational group with characteristics that separate them from other creative individuals and artists (Greengross & Miller, in press) (Fisher & Fisher, 1981). Unlike most other creative professionals, comedians write their own material and perform it on stage. Professional comedians also have an exceptional lifestyle. They travel excessively, have relatively low job security, have no union that can support and protect them, and for a large part of their career they work in relative obscurity (Greengross & Miller, in press).

There are numerous accounts of the comedian's life both on and off stage (e.g. S. Martin, 2007; Zoglin, 2008). Almost all these biographical and autobiographical descriptions are anecdotal, and little has been done to systematically study their lives or to understand the factors that contribute to a successful career as a comedian (Fisher & Fisher, 1981; Janus, 1975; Janus et al., 1978). While much of the focus has been on the actual performance of comedians and the humor they display on stage (e.g. Greenbaum, 1999; Rutter, 2000), not much is known about their own private sense of humor and how it might affect their public performance and contribute to their success.

Generally, sense of humor is regarded as one of the most socially desired traits (Keltner, Young, Heerey, Oemig, & Monarch, 1998). Individuals with a good sense of humor are perceived as friendlier, more interesting, pleasant, intelligent, emotionally stable and creative (Cann & Calhoun, 2001; Kaufman et al., 2008; O'Quin & Derks, 1997). Using humor also elicits feeling of closeness among strangers and is attractive to potential mates (Buss, 1988; Fraley & Aron, 2004; Greengross & Miller, 2008; Lundy, Tan, & Cunningham, 1998). However, despite the favorable view of humor that most

people have, not all uses of humor are positive. People exploit humor to put down others, make sexist remarks, disparage other ethnic groups, or enhance stereotypes toward minorities, and can express aggressive behavior in response to exposure to hostile humor (Baron, 1978; Ford, 2000; Ford & Ferguson, 2004; Greengross & Miller, 2008; Maio, Olson, & Bush, 1997).

There have been several attempts to measure the different facets of sense of humor, many of them focusing on the positive aspects of humor, such as the use of humor as a coping mechanism (Martin & Lefcourt, 1983). Most humor measures tend to view sense of humor as a virtue contributing to the physical health of the individual (Martin & Lefcourt, 1984; Svebak, 1974). However, the idea that an individual's psychological and physical health benefit from humor is disputed, with little empirical support, partially because researchers tend to focus on positive humor expressions, and ignore unhealthy types of humor (Anderson & Arnoult, 1989; Martin, 2001, 2003).

Recently, a new self-reported questionnaire, the Humor Styles Questionnaire (HSQ), was developed (Martin et al., 2003). The HSQ measures both positive and negative uses of humor, and is increasingly used by humor researchers (Chen & Martin, 2007; Erickson & Feldstein, 2007; Greengross & Miller, 2008). This new tool counters a naive perception about humor, in which a person either has or does not have a sense of humor, and paints a more complex multidimensional picture of humor.

The HSQ is comprised of four humor dimensions concerning different functions or usages of humor (Martin et al., 2003). Two of these dimensions, affiliative humor and self-enhancing humor, are benign and describe positive uses of humor. These humor styles have usually been the focus of humor researchers. Affiliative humor is the

tendency to tell jokes and say funny things while with others, not to take oneself too seriously, and to try to put others at ease. This type of humor is generally friendly and not mean-spirited in nature. Self-enhancing humor is the ability to find things funny in everyday situations and have a humorous outlook on life, even in trying and stressful times. This type of humor has less to do with interactions with other people, and more to do with using humor as a coping mechanism, something that has been the focus of previous measures (Lefcourt et al., 1995; Martin, 1996).

The two negative styles of humor are aggressive humor and self-defeating humor (Martin et al., 2003). People who use aggressive humor tend to tease and ridicule others and use put-down and other-deprecating humor. Individuals who use this type of humor either do not take into account the harmfulness of their humor while exploiting others' weaknesses, or they understand the dominant power of humor all too well and use this type of humor to derogate others to their own advantage. This humor can be hostile toward individuals or groups (e.g. sexist or racist humor). Self-defeating (or -disparaging) humor is the tendency to amuse others at the expense of oneself, to enjoy being the "butt" of jokes and laughing with others after being disparaged. This kind of humor is allegedly sometimes used to hide one's own feelings as a defense mechanism.

It is hard to predict how comedians' humor styles differ from other people's, or even from the humor they portray on stage. Many comedians use aggressive humor on stage, including sexual and ethnic humor (Fisher & Fisher, 1981; Janus, 1975). However, the humor expressed in their acts is directed to a specific audience, which comes with specific expectations to be entertained, and may not reflect the humor they used in private life. In a previous study, comedians' personalities off-stage were markedly different than

on-stage (Greengross & Miller, in press). Comedians tend to display an extraverted personality on stage (Janus, 1975), but are quite introverted in their real life compared to non-comedians. This result suggests that their sense of humor might be different not only compared to other people but also compared to their own stage persona.

Although each of the four humor styles depicts a distinct function of humor and hence is conceptually distinct from the others, there is some overlap among the different styles. Affiliative humor moderately positively correlates with self-enhancing humor, and aggressive humor positively correlates with self-defeating humor, albeit to a lesser degree (Chen & Martin, 2007; Greengross & Miller, 2008; Kazarian & Martin, 2006).

Previous studies also found moderate to strong relationships between HSQ and the Big Five personality scale (Greengross & Miller, 2008; Martin et al., 2003; Saroglou & Scariot, 2002). In particular, affiliative humor tends to be positively correlated with openness and extraversion; self-enhancing humor is positively correlated with extraversion and negatively correlated with neuroticism. Aggressive and self-defeating humor are both negatively correlated with agreeableness and conscientiousness, and self-defeating humor also positively correlates with neuroticism.

The purpose of the current study was to explore the humor styles of professional stand-up comedians as related to their personality characteristics. Specifically, do comedians have a sense of humor similar to other people? How does comedians' humor relate to their personality, and is this relationship similar to non-comedians? In addition, how do comedians' humor styles relate to their success on stage?

3.2 Method

3.2.1 Participants

A total of 31 professional stand-up comedians were recruited through a local comedy club. Their average age was 38.9 years (SD = 8.02). Comedians had an average of 15.5 years of education (SD = 3.33).

The non-comedy sample consisted of 400 undergraduates (200 males, 200 females) enrolled in psychology courses at the University of New Mexico who received partial credit for participation. UNM is the largest state university in New Mexico with a diverse population, including minorities and nontraditional students. The average age of the students was 20.5 years (SD = 4.65). Participants had an average of 13.41 years of education (SD = 1.33).

3.2.2 Measures

3.2.2.1 Big Five personality scale

Participants completed the NEO-FFI-R survey (Costa & McCrae, 1992) which measures five dimensions of personality (openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism). Participants rated themselves on 60 items using a seven-point likert scale, from 1 (Strongly Disagree) to 7 (Strongly Agree). All five personality dimensions showed high internal consistency scores in the complete sample (Cronbach's α: Openness to experience: .80; Conscientiousness: .83; Extraversion: .77; Agreeableness: .75; neuroticism: .84).

3.2.2.2 Humor Styles Questionnaire

Participants completed the HSQ which measures four dimensions of humor styles (Martin et al., 2003). The HSQ is a self-report questionnaire that consists of 32 statements on a 7 point likert scale ranging from 1 (Totally disagree) to 7 (Totally agree). Four dimensions derive from the scale: affiliative humor (e.g.: "I laugh and joke a lot with my friends"); self-enhancing humor (e.g.: "My humorous outlook on life keeps me from getting overly upset or depressed about things"); aggressive humor (e.g.: "Sometimes I think of something that is so funny that I can't stop myself from saying it, even if it is not appropriate for the situation"); and self-defeating humor (e.g.: "I let people laugh at me or make fun at my expense more than I should").

3.2.2.3 Relative success of comedians

To measure the success of the comedians, they were asked to indicate the number of weeks they performed as a stand-up comedian in the past year. Successful comedians are hired more often than unsuccessful ones. To control for a possible threat to construct validity, in which the number of weeks comedians went on stage reflects only their experience and not their success, comedians were also asked to supply the age they turned professional. By calculating the number of years they worked as professional comedians ("age" minus "age turned pro") we constructed a control variable that minimizes the possible confounding effect of experience, and the possibility that some good young comedians may not perform for many weeks because they are not yet very well known.

3.3 Results

3.3.1 Inter-humor correlations

Table 3.1 displays the inter-correlations among all four dimensions of humor styles for both comedians and students, with Cronbach α's for all participants. Two of the six correlations yielded a similar magnitude and direction of scale correlations for both comedians and students: between the affiliative and self-enhancing, and aggressive and self-defeating scales. For comedians, self-enhancing and self-defeating scales were strongly correlated, but for the students they were unrelated. For students, affiliative and aggressive were weakly related but for the comedians they were moderately related, albeit not statically significant.

Since the sample of comedians includes mostly male comics, a separate analysis was performed for both male comedians and male students. Overall, the results were similar to the total sample. For male comedians ($n = 28$) there are two significant correlations: affiliative and self-enhancing ($r = .45$, $p < 0.01$), self-enhancing and self-defeating ($r = .54$, $p < 0.01$); for students ($n = 200$), affiliative and self-enhancing ($r = .46$, $p < 0.001$), aggressive and self-defeating ($r = .23$, $p < 0.01$), affiliative and aggressive ($r = .19$, $p < 0.001$). All other correlations were non-significant.

Table 3.1

Cronbach αs for all participants (n=431) and scale inter-correlations of the four Humor Styles Questionnaire scales for comedians and students separately

	Affiliative	Self-enhancing	Aggressive	Self-defeating
Affiliative humor	**.83**	.42*	.24	.11
Self-enhancing humor	.49***	**.82**	.31	.47**
Aggressive humor	.15**	.01	**.72**	.37*
Self-defeating humor	.06	.03	.28***	**.83**

Cronbach α-coefficients (total sample) are on the diagonal. Correlations for comedians are above the diagonal (n=31), for students below the diagonal (n=400).

* p < .05.

** p < .01.

*** p < .001.

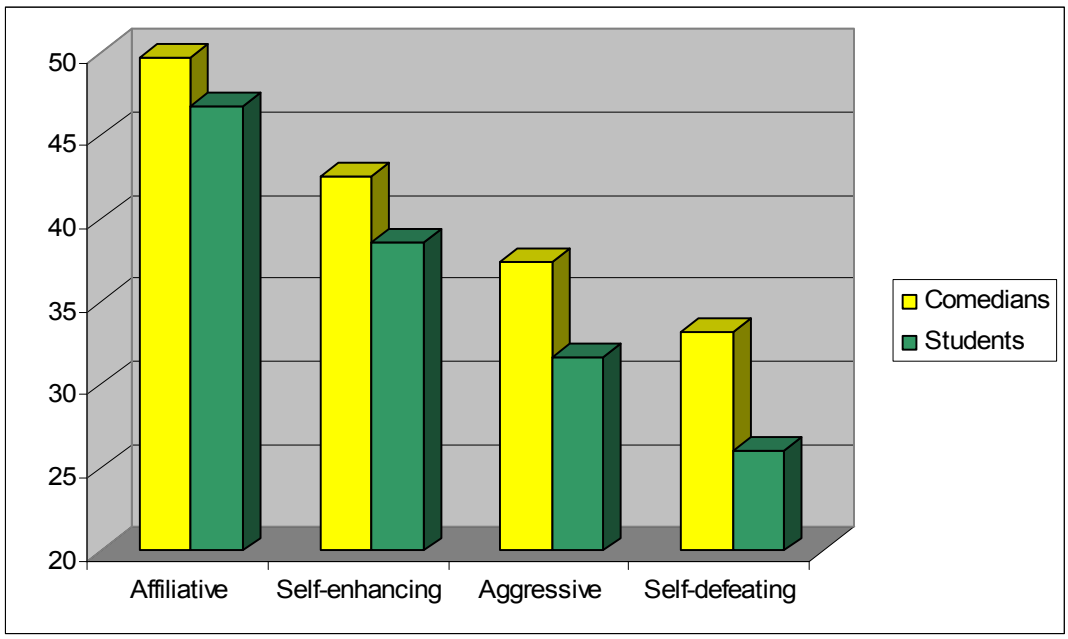
3.3.2 Differences in humor styles

A comparison between the comedians and the students on each of the humor styles is presented in Figure 3.1. Using t-tests, we compared the mean differences between comedians and students on each dimension, along with Cohen's d effect sizes (Cohen, 1988). Typically in psychological research, effect sizes are divided into three general categories: small (d = .2), medium (d = .5) and large (d = .8).

The trend of the results is the same for comedians and students. For both groups, affiliative humor was the highest scale followed by self-enhancing humor, aggressive humor and self-defeating humor. The results showed that comedians score higher than students on each of the four dimensions of humor: affiliative [t (428) = 2.22. P < .001, d = .47)], self-enhancing [t (427) = 2.63. p < .001, d = .55)], aggressive [t (426) = 3.88. p <

.001, d = .80)], and self-defeating [t (427) = 4.11. p < .001, d = .69)]. A second comparison that included only male comedians was performed and yielded a similar trend and results: affiliative [t (226) = 1.64. p < .05, d = .37)], self-enhancing [t (224) = 2.47. p < .05, d = .45)], aggressive [t (225) = 2.70. p < .01, d = .49)], and self-defeating [t (221) = 2.26. p < .05, d = .42)].

Figure 3.1
Differences between comedians and students on the four dimensions of humor styles.



3.3.3 Humor styles and personality

The relationships among the humor styles and The Big Five personality scale are displayed in Tables 3.2 and 3.3. Table 3.2 shows the correlation matrix between humor styles and personality for comedians, and Table 3.3 displays the same correlations for students.

Table 3.2

Stand-up comedians' (N=31) bivariate correlation matrix with Humor Styles Questionnaire scales and the Big Five personality dimensions

	Affiliative	Self-enhancing	Aggressive	Self-defeating
Openness	.38*	.05	.20	.08
Conscientiousness	-.15	.12	.17	.13
Extraversion	.35*	.07	.15	.16
Agreeableness	.44*	.06	-.12	.12
Neuroticism	-.08	-.14	.01	.30

* p < .05.

Table 3.3

Students' (N=400) bivariate correlation matrix with Humor Styles Questionnaire scales and the Big Five personality dimensions

	Affiliative	Self-enhancing	Aggressive	Self-defeating
Openness	.26***	.19***	.01	-.05
Conscientiousness	.09	.19***	-.28***	-.27**
Extraversion	.40***	.36***	.01	-.02
Agreeableness	.03	.19***	-.52***	-.09
Neuroticism	-.27***	-.53***	.14**	.26***

* p < .05.

** p < .01.

*** p < .001.

Looking only at the male participants of both groups revealed that for comedians, only the correlation between affiliative humor and agreeableness was significant ($r = 0.46$, $P < 0.05$). For the students' sample, almost all correlations were similar in their

magnitude, direction and significant with two exceptions: self-enhancing and openness, and aggressive and neuroticism had both .07 correlations that was non-significant.

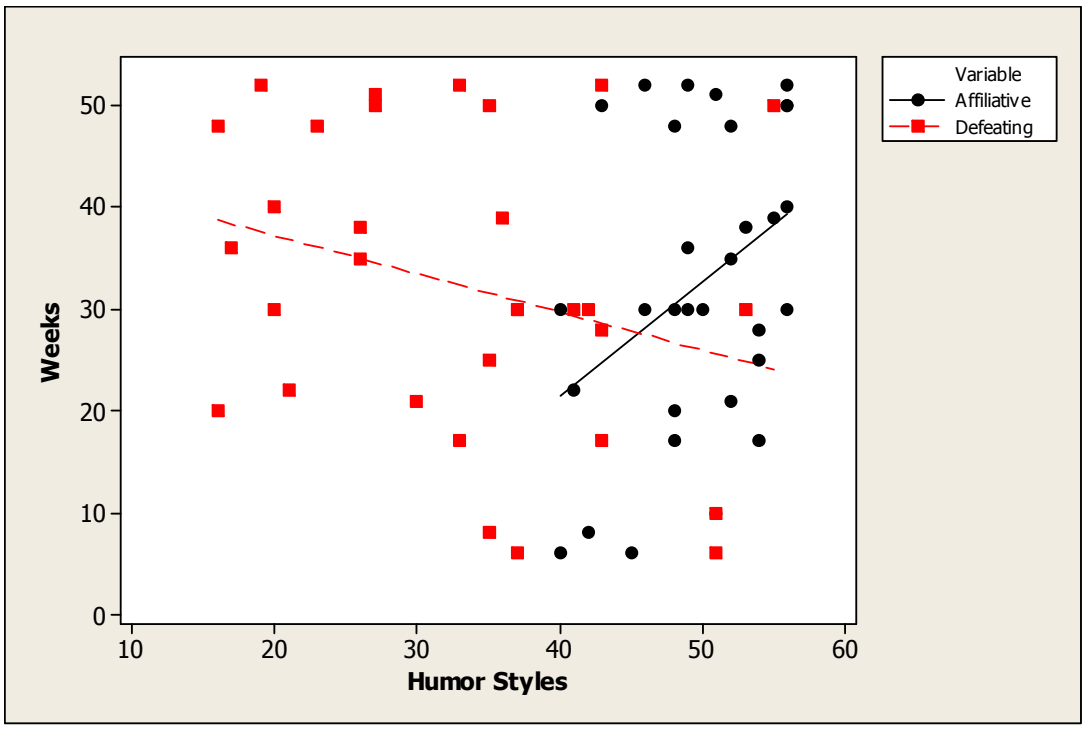
3.3.4 Predicting comedians' success

Comedians became professional at an average age of 26.9 (6.5). The average years they performed as professionals was 12.0 (7.7), and the average weeks they performed last year was 31.6 (14.4). To assess the possible effects of comedians' humor styles on their on stage success, we conducted a backward elimination regression wherein the number of weeks comedians performed in the past year was regressed on humor scales (affiliative, self-enhancing, aggressive and self-defeating), age, and number of years as a professional comedian. The final model was significant [F (2, 30) = 4.58, adjusted R^2 = .26, p < .05)], with two predictors: affiliative humor (b = 1.14, p < .05) and self-defeating humor (b = -.50, p < .05). Applying the same regression to only male comedians yielded similar results. This final regression model [F (2, 27) = 5.68, adjusted R^2 = .34, p < .01)], had the same two predictors: affiliative humor (b = 1.12, p < .05) and self-defeating humor (b = -.55, p < .05).

Figure 3.2 shows the scatterplot and the regression line of both affiliative and self-defeating humor in predicting weeks on stage.

Figure 3.2

Weeks comedians performed in a year as a function of humor styles (affiliative and self-defeating)



3.4 Discussion

The purpose of this study was to examine the everyday humor styles of professional comedians, the relationship between humor styles and personality, and how humor styles may affect on stage success. The data for this study show that professional comedians' and students' humor styles follow the same trend, but comedians score higher on each of the scales. Both groups scored highest on affiliative humor, followed by self-enhancing humor, aggressive humor and self-defeating humor. This trend is consistent with previous studies on the subject (Erickson & Feldstein, 2007; Greengross & Miller,

2008; Martin et al., 2003). Both affiliative and self-defeating humor were predictive of comedians' success albeit in opposite directions. The inter-correlations of humor styles are similar for both comedians and students and consistent with other studies (Chen & Martin, 2007; Greengross & Miller, 2008; Kazarian & Martin, 2006). Comedians exhibit fewer and weaker relationships between humor styles and the Big Five dimensions of personality.

Perhaps it is not surprising that professional comedians scored higher than students on each of the humor scales. Comedians surround themselves with humor and devote their careers to thinking about and analyzing humor. They think about new material every day, write jokes for their act, perform on stage, and watch other comedians, with whom they discuss their work.

What might be surprising are comedians' low scores on the negative humor styles (aggressive and self-defeating) compared to the other two positive styles. This is a striking difference from their on stage use of humor. Comedians' on-stage acts tend to be hostile and aggressive, often making fun of the audience, telling sexist and racist jokes, and using foul language (Fisher & Fisher, 1981; Janus, 1975). This adds to the known disparity between comedians' performances in front of an audience and their everyday behaviors, which tend to be relatively solitary (e.g.: traveling extensively by themselves, writing their material alone). We tend to see comedians as extraverted and ostentatious, but in reality they have introverted personalities compared to both humor writers and students (Greengross & Miller, in press).

Affiliative humor plays an important role in comedians' lives and is imperative to their success. Comedians' use of affiliative humor is the only style with strong

connections to their personality. For comedians, affiliative humor correlates with the Big Five dimensions of openness, extraversion and agreeableness. Openness to experience and agreeableness probably promote comedians to engage with other people in social situations, and the pleasant atmosphere could help facilitate humor. The ability to laugh with other people, share humorous stories and put others at ease by using humor is no doubt an important role of a successful comedian, and hence explain why affiliative humor was a significant predictor of their on stage success. Comedians must be sensitive to audience reaction and tune their act accordingly. Even if they use aggressive humor in their performance, they still have to take into account what a specific audience finds funny. Those who are high on affiliative humor may have an advantage since they can bring their own social experience to the stage. Comedians who score low on this scale may be more likely to "lose" the audience, and not know how to adjust their act properly.

Another humor style that was found to negatively predict comedians' success is self-defeating humor. Clearly, self-defeating humor is a negative humor style that could have a harmful effect on an individual's well being (Martin et al., 2003). Self-defeating humor is usually regarded as a destructive humor style, a style that individuals use to make fun of themselves and let others make jokes at their expense. Of all humor styles, this is the type that is used the least by comedians and others, and its effect on comedians' success is relatively small. It is possible that comedians who score high on this type of humor are perceived to be weaker, and hence less funny. It is also possible that self-disparaging humor is destructive in establishing good social relationships, something that can impair the probability of being hired to perform by the club managers, in a business that relies heavily on good social skills.

The results of this study further support the view that professional comedians are a vocational group that has distinct characteristics compared to other groups. Not only are they unique by the fact that they perform on stage, but also by their personality and humor styles and the connection between them off stage. Their humor styles and personality seem to be quite in contrast to the humor and personality they bring to the stage, but nonetheless they are intertwined in myriad ways that may explain why they are successful. Clearly, comedians' success is largely due to their produced humor, and further studies should investigate in more detail the different uses of humor on stage, their relationship to their own humor styles, and their interactions with the audience.

CHAPTER 4: HEALTH AND HUMOR: DO COMEDIANS HAVE BETTER HEALTH?

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Key words: Humor, Stand-up Comedy, Physical Health, Infections

Abstract

There is a widely held belief that humor influences health. To assess this idea, we compared the susceptibility to various infectious diseases of 28 male professional stand-up comedians and 200 male students. Stand-up comedians are experts in producing humor, and as part of their work surround themselves with humor. If humor does have health benefits, we should expect that comedians will be healthier than other people overall. Results, based on a self reported questionnaire, showed that comedians are more resistant to contagious diseases, especially head colds, skin infections and autoimmune diseases, compared to the students. On the other hand, comedians' BMI was higher than the students'. These results suggest that their unique profession and lifestyle may have both positive and negative effects on their health.

4.1 Introduction

There is a widely accepted view among health professionals and the general population alike that humor and laugher contributes to an individual's physical and mental health. This view became very popular following Norman Cousins' autobiographical account of recovering from a serious illness by watching comedy films (Cousins, 1979, 1985). However, research conducted on the relationship between humor and health reveals a more complex picture (Martin, 2001; R. A. Martin, 2007).

One of the main problems when looking at the relationship between humor and health is that both are defined in various ways, thus contributing to the conflicting and mixed associations between the two (Martin, 2001; R. A. Martin, 2007). Humor can be seen as a personality trait, mood, cognitive ability, or a defense mechanism, and there is no agreed-upon definition among researchers on what exactly sense of humor entails (Long & Graesser, 1988; Martin, 1998; Provine, 2000; Ruch, 2004). Sense of humor includes social, developmental, emotional, cognitive, and biological aspects (Gervais & Wilson, 2005; Mobbs, Hagan, Azim, Menon, & Reiss, 2005; O'Quin & Derks, 1997). Each of them separately, and combined with others, can potentially contribute to both physical and mental health. For example, a person who has a humorous outlook on life and tries to find humor in everyday experiences appears very unlike a person who has a serious personality but enjoys comedy movies and laughs at other people's jokes. Both of these people have a sense of humor, even though their daily uses of it are quite different. Each humor type could potentially yield unique health benefits.

Similarly, studies that looked at how humor may affect health have used different measures of health, such as blood pressure, pain tolerance, heart rate, and self-reported

symptoms of illness (Martin, 2001). Most studies conducted on the subject are done in the laboratory and focus on the short-term effects of humor on health. For example, studies that expose participants to humor stimuli such as a comedy film or written jokes found that humor can reduce stress (Abel & Maxwell, 2002), or increase pain threshold (Weisenberg, Raz, & Hener, 1998). However, many of the studies that test how humor affects health do not use an appropriate control group. For example, when including negative stimulus such a tragedy film, participants experienced the same analgesic effects as with the humor stimuli (Zillmann, Rockwell, Schweitzer, & Sundar, 1993).

Of special interest is the possible long term relationship between humor and health. As with the lab studies, the research on the subject is somewhat conflicted, and no clear relationship emerges (Martin, 2001). For example, Fry (1995) found that self-reported measures of physical symptomatology negatively correlated with scores on situational and coping humor questionnaires; however, Simon (1990) discovered a positive correlation between health perception measures and a situational humor questionnaire. In addition, other studies failed to find any relationship between sense of humor and self report questionnaires on illness symptoms (Anderson & Arnoult, 1989; McClelland & Cheriff, 1997). Many of the positive relationships between self reported measures of sense of humor and health symptoms may have been confounded with neuroticism, a known factor that negatively correlates with humor scales and positively correlates with self report health questionnaires (Greengross & Miller, 2008; Kohler & Ruch, 1996; Watson & Pennebaker, 1989).

Professional stand-up comedians are a vocational group that experience sense of humor on different levels daily (Fisher & Fisher, 1981; Janus, 1975). Comedians devote

large amounts of time to writing and practicing their acts that they perform on stage, and their work dictates constant deliberation on funny material. In addition, comedians are typically surrounded by other comedians which increases the amount of humor they experience. As both creators and consumers of humor, comedians are in a unique position to reap any health benefits that might come with humorous lifestyle.

Only three previous studies have investigated the possible health benefits of humor to comedians by looking at the longevity of male stand-up comedians in comparison to other male entertainers (Rotton, 1992). The results showed that there was no significant difference in life span between comedians and other entertainers. Two additional studies arrived at the same conclusion when comparing the longevity of literary and media humor writers to serious writers (Rotton, 1992). These results were also true even when humor writers were matched with serious writers on the year they were born and for various causes of death.

Although there is little evidence that a career as a comedian or humor writer prolongs life, it is possible that the prevalence of humor associated with their work can affect their health by other means. One such advantage might be a low incidence of infections. Thornhill and Gangestad (2006) used resistance to infections, especially respiratory disease, as a measure of immunocompetence when studying male facial masculinity and female facial femininity as markers for good health. Other studies on the beneficial relationship between humor and immunity found weak and inconsistent evidence that humor benefits the immune system (For a review see: Martin, 2001; R. A. Martin, 2007).

The purpose of this study, therefore, is to examine if comedians' daily pursuit of humor has any effect on their health.

4.2 Method

4.2.1 Participants

Professional comedians were recruited through a local comedy club (in Albuquerque, NM, c. 2008). In total, 31 professional comedians were interviewed for this study (see Greengross & Miller for details). Since only three female comedians participated in the study, we decided to focus on the 28 male comedians and compared them to the male control group. It is estimated that between 80%-90% of comedians are males, so our sample represents the true sex difference in comedy. The 28 male comedians had an average age of 38.9 years (SD = 8.35). Comedians had an average of 15.2 years of education (SD = 3.17). Nineteen participants (67.9%) self-identified as White, 5 (17.9%) as African American and 4 (14.3%) as Hispanic.

Two hundred undergraduates enrolled in psychology courses at the University of New Mexico participated in the study and received partial course credit for participation. UNM is the largest state university in New Mexico with a diverse population, including minorities and nontraditional students. The average age of the students was 21.1 years (SD = 5.42). Participants had an average of 13.5 years of education (SD = 1.37). One hundred and twelve participants (56.0%) self-identified as White, 58 (29.0%) as Hispanic, 11 (5.5%) as Asian, 8 (4.0%) as American Indian, 6 (3.0%) as African American, and 5 (2.5%) as "other."

4.2.2 Measures

Demographic and *anthropometric information*. Participants completed a short demographic questionnaire that included items regarding age, education, race and height and weight. Body mass index (BMI) was calculated as weight (kg)/height $(m)^2$.

Health questionnaire. An expanded version of Thornhill and Gangestad's (2006) health history questionnaire was used. The questionnaire asked participants to list the number of episodes and the total days they had had each of the following infectious diseases in the past three years: Respiratory (chest) infections (e.g. persistent cough, pneumonia), head colds (e.g. headache, runny nose, cough), stomach or intestinal flu (e.g. diarrhea, nausea), skin infections (e.g. eczema, warts, persistent acne, dandruff), bladder infections (e.g. cystitis), autoimmune diseases (e.g. allergies, asthma), or other infections (e.g. ear ache, eye infection). In addition, participants were asked to report the number of infections for which they had taken antibiotics in the past three years.

4.2.3 Procedures

Professional comedians were recruited individually from the comedy club after they performed. The club hosts between one and three professional comedians every week, who perform for several nights in a row. A meeting on a later date was scheduled for those who agreed to participate in the study. All comedians signed informed consent

before participating and were debriefed after they completed the questionnaires. Students completed the questionnaires in a classroom in groups of up to 15.

4.3 Results

To circumvent the effect of extreme cases we truncated the number of days infected to 100 if there were more than 100 days reported. This affected two participants with respiratory infections (both students), three participants with head colds (all students), 11 participants with skin infections (all students), and 13 participants with autoimmune diseases (one comedian, 12 students).

Using t-test we compared the differences between comedians and students. We calculated Cohen's d effect sizes for the difference scores on each of the health measures between professional comedians and students (Cohen, 1988). These results are presented in Table 4.1**.** Typically in psychological research, effect sizes are divided into three general categories: small (d =0 .2), medium (d = 0.5) and large (d = 0.8).

Since comedians' average age is significantly larger than the average age of the students ($t = 10.99$, $P < 0.000$), we conducted a series of logistic regressions (backward elimination) wherein group (comedian, student) was regressed on age, along with each of the significant variables from Table 4.1 separately. The results are displayed in Table 4.2**.**

Table 4.1

Pair-wise comparisons and effect sizes between professional comedians and students on illness indicators in previous three years

	Comedians (n=28) M (SD)	Students (n=200) M (SD)	t	d
BMI	30.41 (7.76)	24.43 (4.35)	-6.07***	-0.95
Respiratory Infections				
Number	1.00 (1.67)	1.50 (3.14)	0.86	0.20
Days infected	3.95 (7.35)	5.55 (10.37)	0.78	0.18
Head colds				
Number	2.53 (1.89)	5.84 (10.31)	4.07*	0.45
Days infected	9.46 (8.90)	13.13 (16.63)	1.14	0.27
Stomach or intestinal flu				
Number	1.68 (3.09)	1.99 (4.41)	0.37	0.08
Days infected	3.75 (6.76)	3.17 (5.06)	-0.55	-0.10
Skin infections				
Number	0.14 (0.52)	1.27 (4.287)	3.51**	0.37
Days infected	0.86 (3.19)	9.62 (25.16)	4.62***	0.49
Bladder infections				
Number	0.04 (0.19)	0.09 (0.76)	0.35	0.09
Days infected	0.04 (0.19)	0.32 (2.54)	0.59	0.15
Autoimmune diseases				
Number	1.07 (2.70)	2.86 (9.09)	1.03	0.27
Days infected	5.29 (19.50)	15.15 (29.87)	2.32*	0.60
Other infections				
Number	0.36 (0.49)	0.39 (0.88)	0.17	0.04
Days infected	3.18 (6.35)	1.43 (3.48)	-1.42	-0.34
Total number of infections	6.82 (6.15)	13.82 (21.21)	3.69***	0.44
Total days infected	26.52 (27.87)	48.90 (50.54)	3.50***	0.55
Number of antibiotics	0.98 (1.19)	1.73 (2.65)	2.55*	0.36

Positive effect size denotes that professional comedians scored lower than the comparison group on the illness indicator. Levene's Homogeneity of Variance Test was conducted. In cases where non-equal variances were discovered we continue and conducted the t-test appropriately.

* P < 0.05.

** P < 0.01.

*** P < 0.001.

Table 4.2

Parameter estimates for age and infectious diseases predicting group

	Intercept (SE)	Health (SE)	Age (SE)	Interaction (SE)
BMI	14.83 (4.79)**	-0.27 (0.16)	-0.35 (0.14)*	0.01 (0.01)
Respiratory Infections				
Number	7.81 (1.11)***	0.19 (0.48)	-0.21 (0.04)***	-0.01 (0.02)
Days infected	7.49 (1.09)***	-0.12 (0.15)	-0.20 (0.04)***	-0.01 (0.00)
Head colds				
Number	5.92 (1.59)***	0.64 (0.52)	-0.16 (0.05)**	0.02 (0.02)
Days infected	7.25 (1.39)***	0.06 (0.11)	-0.20 (0.05)***	-0.01 (0.01)
Stomach or intestinal flu				
Number	7.63 (1.11)***	0.20 (0.37)	-0.20 (0.04)***	-0.01 (0.01)
Days infected	7.66 (1.16)***	0.08 (0.21)	-0.20 (0.04)***	-0.01 (0.01)
Skin infections				
Number	9.25 (1.29)***	-2.13 (0.90)*	-0.27 (0.04)***	0.12 (0.04)**
Days infected	8.65 (1.17)***	-0.26 (0.11)*	-0.25 (0.04)***	0.01 (0.01)**
Bladder infections				
Number	7.80 (1.00)***	39.26 (55940)	-0.21 (0.03)***	-1.37 (2913)
Days infected	7.80 (1.00)***	44.80 (15726)	-0.21 (0.03)***	-1.81 (729)
Autoimmune diseases				
Number	9.32 (1.29)***	-0.21 (0.20)	-0.27 (0.04)***	0.01 (0.01)*
Days infected	9.10 (1.28)***	-0.04 (0.04)	-0.26 (0.04)***	0.01 (0.01)*
Other infections				
Number	7.68 (1.08)***	0.87 (1.71)	-0.21 (0.04)***	-0.04 (0.06)
Days infected	7.56 (1.06)***	0.37 (0.43)	-0.20 (0.03)***	-0.01 (0.02)
Total number of infections	9.18 (1.48)***	-0.11 (0.09)	-0.28 (0.05)***	0.01 (0.00)*
Total days infected	9.39 (1.60)***	-0.03 (0.02)	-0.29 (0.05)***	0.01 (0.01)*
Number of antibiotics	8.17 (1.17)***	-0.25 (0.37)	-0.27 (0.04)***	0.01 (0.01)

Group (comedians = 0, students = 1). Health refers to the corresponding infectious diseases. Interaction is between age and the infectious disease.

* P < 0.05.

** P < 0.01. *** P < 0.001.

4.4. Discussion

The purpose of this study was to examine whether professional stand-up comedians have better health compared to other people. The data for this study shows

that male professional comedians reported fewer numbers of infections of all seven types, and fewer days infected in five out of seven infections studied, compared to students, though not all these differences were statistically significant. Differences range from small to medium effect sizes. These findings are especially intriguing given the age differences between the two groups and the expectation that older people will exhibit more health problems. In addition, we found that comedians have significantly higher BMI than students.

The results suggest that professional comedians may have lower incidence of infections compared to college students. The effect sizes are probably underestimated given the truncation of the data. It is unclear why these differences exist, and even surprising given the large age difference between comedians and students. It is possible that comedians' exposure to large audiences strengthens their immune systems in the long run. The opposite could be claimed as well, namely that comedians are more exposed to infection since they travel to numerous venues and interact with a different audience every night. One possibility for the relatively lower reports of illness by comedians is that comedians underreported the number of infections they had. Stand-up comedy is a competitive business, and the cost of missing a show due to sickness can be high. In addition, they are outside their homes for long periods, and the cost and effort of going to a doctor where they perform may discourage them from doing so. Therefore, it is possible that comedians are not diagnosed properly. However, even if this is true, it does not explain why comedians would have fewer health concerns, such as head colds, that do not typically require a visit to the doctor.

Comedians in this study have markedly higher BMI than students, though this could partly be explained by the age difference. National Center for Health Statistics (NCHS) defines healthy weight for adults as a BMI of 18.5 to less than 25, overweight as greater than or equal to a BMI of 25, and obesity as greater than or equal to a BMI of 30 (NCHS, 2007). While students' average BMI falls within the range of healthy weight, comedians' average BMI is borderline obese. This result counters the superior immunocompetence that comedians may have. The discrepancy might be explained by the fact that people have little control over their immune system, but their behaviors and lifestyle largely influence their BMI. Comedians' unhealthy diet may account for their high BMI. Additionally, most comedy clubs offer free alcoholic beverages to comedians who perform in the club. It is also common for many comedians to go to bars or parties after the show. This is in accordance with what has been studied about entertainers' personality and lifestyle. Rotton (1992) found that comedians and humor writers, as well as serious entertainers and writers died younger than individuals who achieved fame in other areas, as documented in the obituaries of Time and Newsweek magazines. It is possible that famous people such as comedians live a more intense life, and are exposed to stress and other risks that could shorten their lives (Janus, 1975; Janus et al., 1978). This stress could also lead them to adopt an unhealthy lifestyle, which results in high BMI. Comedians also tend to travel extensively, often in different states, with no normal routine. This may make it more difficult to exercise regularly, eat healthy food, or avoid the temptations that come with the fame associated with their success.

In sum, being a professional comedian can be associated with lower susceptibility to infectious diseases. It is not clear if this resistance is due to the unique lifestyle of

comedians or if it is due to their humor related work. It seems that some of the choices they make could worsen their health, even shortening their lives. Further studies need to look more precisely at the specific circumstances that lead to these diverse health outcomes.

CHAPTER 5: THE EVOLUTION OF HUMOR: INTELLIGENCE, FITNESS INDICATORS, AND MATING SUCCESS

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Key words: Humor, Intelligence, RAPM, MAB, Stand-up Comedy, Sexual Selection, Mental Fitness Indicators

Abstract

There is growing evidence that sense of humor plays an important role in sexual selection, especially as a mental fitness indicator. According to this theory, a good sense of humor signals intelligence and translates into mating success. In this study, 400 students (200 males, 200 females) and 31 professional comedians (28 males, three females), were instructed to write funny captions for cartoons whose captions had been removed. Five judges rated the captions independently with high internal consistency. Results showed that, on average, comedians were funnier than students, and males were funnier than females. Humor production had stronger correlations with verbal intelligence as measured by the vocabulary subset of the Multidimensional Aptitude Battery (MAB), than with the Ravens' Advanced Progressive Matrices (RAPM) test. The correlation between humor production and each intelligence test was stronger for males. Individuals with good sense of humor were also more likely to enjoy mating success, suggesting that humor production is in fact a mental fitness indicator. Even though comedians scored higher on verbal intelligence, there was no relationship between

verbal intelligence and humor production for comedians, suggesting that humor is not a mental fitness indicator for them. These findings shed further light on the nature of humor and its complexity.

5.1. Introduction

Humor is a universal human phenomenon, enjoyed on a daily basis in both tribal and industrialized societies. Mechanisms such as surprise and incongruity in non-serious social interactions seem to elicit the emotion of mirth everywhere in the world (Gervais & Wilson, 2005; R. A. Martin, 2007). Human smiling and laughter are believed to be homologous to the silent bared teeth display and the relaxed open mouth display, respectively, in other primates (Gamble, 2001; Preuschoft & Van-Hooff, 1997; Waller & Dunbar, 2005). Thus, it is widely believed that humor production and humor appreciation played an important role throughout our evolutionary history, though the nature of this adaptation is still debated (Alexander, 1986; Gervais & Wilson, 2005; Miller, 2000a; Ramachandran, 1998; Weisfeld, 1993).

There is growing evidence that sexual selection plays an important part in explaining the adaptive value of humor, in particular by viewing humor as a mental fitness indicator (Bressler & Balshine, 2006; Bressler et al., 2006; Miller, 2000a, 2000b). According to this view, sense of humor evolved through mutual mate choice to signal mate quality, similar to other human capacities, such as art, morality, creativity and language (Miller, 2000a). These abilities are hard-to-fake mental fitness indicators, and presumably serve to display genetic quality (Miller, 2000c; Miller & Penke, 2007). There are differential reproductive costs for males and females; thus we expect males to

use better humor production abilities more often, and females to be more receptive to humor signals (Bressler et al., 2006; Buss & Schmitt, 1993; Trivers, 1972).

A good sense of humor is a desired trait in a mate, especially for women looking for men (Buss, 1988; Lundy et al., 1998; McGee & Shevlin, 2009). Smith, Waldorf, & Trembath (1990) found that women who placed personal ads requested dates with a sense of humor twice as often as men did. There also seems to be a sex specific mechanism for producing and appreciating humor (Bressler et al., 2006). Women tend to like a man who will make them laugh, while men want a woman who will laugh at their humor. Men also initiate humor around women, while women smile and laugh more on average, during conversations, especially in response to men (Crawford & Gressley, 1991; Provine, 2000).

Intelligence itself is one of the most desired traits in a mate (Buss, 1989). There is growing evidence that general intelligence is heritable (Plomin & Spinath, 2004; Rushton, Bons, Vernon, & Čvorović, 2007) and that it is an indicator of physical health, longevity and body symmetry (an indicator of developmental stability)—all associated with fitness (Deary, 2005; Gottfredson & Deary, 2004; Luxen & Buunk, 2006; Prokosch et al., 2005). There is also evidence that at least some types of humor are heritable. In two studies, heritability was estimated as twice the difference between monozygous twins correlations and dizygous twins correlations for four different humor styles (representing daily uses of humor), ranging from .34 to .49 for the monozygous twins (Vernon, Martin, Schermer, Cherkas, & Spector, 2008; Vernon, Martin, Schermer, & Mackie, 2008). Manke (1998) found that more than 25% of the variance in interpersonal humor of mothers and non-adoptive children was attributed to genetic factors, and their sense of

humor was more similar to each other compared to mothers and adoptive children. In contrast, another study found no differences between both monozygotic and dizygotic twins in humor appreciation of cartoons, suggesting that shared environment (or non-shared randomness and developmental noise) contributes the most for humor appreciation (Cherkas, Hockberg, MacGregor, Snieder, & Spector, 2000).

If a good humor production ability is an honest indicator of intelligence, we should expect humor production to positively correlate with intelligence (Miller, 2000a, 2000b, 2000c). There is evidence that a good sense of humor is an indicator of verbal creativity (Kaufman et al., 2008; O'Quin & Derks, 1997) and intelligence (Feingold & Mazzella, 1993; Howrigan & MacDonald, 2008). These studies reveal moderate correlations between various humor productions tasks and measures of intelligence. Howrigan & MacDonald (2008) found correlations of .12 - .23 between general intelligence, as measured by the Raven's Advanced Progressive Matrices, and judge-rated humor production tasks that included humor responses to funny emails, mock descriptions of stereotyped characters and funny drawings, in a sample of college students. In another study, Feingold & Mazzella (1991) found similar correlations (.31 - .52) between other rater-judged humor production tasks such as writing funny captions to cartoons with stripped captions, and writing a repartee to an absurd question, and the Vocabulary scale of the Multi-Aptitude Test. A correlation of .50 was obtained using similar humor production tasks and the Vocabulary and Block Design portions of the Wechsler Intelligence Scale for Children, for a sample of 10- to 14-year-olds (Masten, 1986).

The purpose of this study was to further investigate the relationship between humor production and intelligence in light of sexual selection and mental fitness indicator theory. To add to its validity, intelligence was evaluated in two different ways, a verbal intelligence test and Raven's Advanced Progressive Matrices. Verbal intelligence was expected to have a stronger correlation with verbal humor production since it is of a similar domain. If producing humor is a mental indicator and if male reproductive variance is higher, males should have a better humor production ability. This study is also a first examination of how producing humor translates into possible mating outcomes. If humor production is a good fitness indicator, individuals with a good sense of humor should have more mating success if not more babies, given modern contraception.

In addition to examining individuals with no particular expertise in humor production, I investigated the relationship between humor production and intelligence in a sample of professional stand-up comedians who are known to have high humor production ability. Two previous studies measured the intelligence of nationally famous comedians who had worked as full time comedians for at least 5 years (Janus, 1975; Janus et al., 1978). The first study with a sample of 55 male comedians found an IQ, as measured by the Wechsler Adult Intelligence Scale, ranging from 115 to 160 with an average of 138 (Janus, 1975). In a subsequent study with 14 female comedians, IQ scores ranged from 112 to 144 with an average of 126 (Janus et al., 1978). Comedians' use of humor could potentially signal their intelligence. No study to date has tried to objectively measure comedians' humor production and in relation to their intelligence.

5.2. Method and measures

5.2.1 Participants

Four hundred undergraduates enrolled in psychology courses at the University of New Mexico participated in the study and received partial course credit for participation. UNM is the largest state university in New Mexico with a diverse population, including minorities and nontraditional students. The average age of the students was 20.6 years (SD = 4.7, range 18-57). Participants had an average of 13.4 years of education (SD = 1.3). Two hundred thirty-one participants (58%) self-identified as White, 117 participants (29%) as Hispanic, 19 participants (5%) as Asian, 14 participants (3.5%) as American Indian, 12 participants (3%) as African American, and 5 (1.5%) as other.

Thirty-one professional comedians (28 males) were recruited through a comedy club in Albuquerque, NM. The comedians had an average age of 38.9 years (SD = 8.6, range 27-58). Comedians had an average of 15.3 years of education (SD = 2.6). Twenty two participants (71%) self-identified as White, 5 participants (16%) as African American and 4 participants (13%) as Hispanic.

5.2.2 Intelligence measures

General intelligence was measured in two ways. The vocabulary subtest of the Multidimensional Aptitude Battery (MAB) is a 46-item verbal test that requires the respondent to choose a word with the nearest meaning to the word given (Jackson, 1984). This subset is the best predictor of verbal abilities and has a .74 correlation with the verbal subset of Wechsler Adult Intelligence Scale – Revised (WAIS-R) (Wechsler, 1981), and .62 correlation with WAIS-R total (Carless, 2000). For students only, a 12-

item version of Raven's Advanced Progressive Matrices (RAPM) (Raven, Raven, & Court, 1998) was administered. This short version has good psychometric properties compared to the full 36-item version (Arthur. Jr & Day, 1994).

5.2.3 Humor production

Participants were give three cartoons without captions from the New Yorker's cartoon caption contest. They were instructed to write as many funny captions as they could think of, for all cartoons, in 10 minutes. This open-ended humor production is considered a valid measure of spontaneous humor (Feingold & Mazzella, 1991, 1993). Unrestricted humor creation in response to a vague stimulus is a method that separates individuals with a good sense of humor from others.

In total, 4688 captions were produced (1676, 1469, and 1543, for each cartoon respectively). Each participant produced 2-26 captions in total (mean = 10.9, SD = 4.0). The captions were rated by six independent judges (four females, two males), on a scale from 1 ("not funny at all") to 7 ("very funny"). Caption order was randomized, and the judges were blind to any characteristics of the participants.

Since participants were not limited in the number of captions they could write, many of them were not funny and received the lowest ratings. Hence, for each cartoon, the participants' maximum score from each of the six raters was recorded. All 18 scores were standardized subsequently. Internal consistency scores were calculated for each of the three cartoons, and Cronbach's α's were .78, .74 and .67. However, one of the judges systematically reduced the reliability and was therefore removed. With the remaining five judges, Cronbach's α's increased to .80, .75, .69, respectively. These reliabilities are high compared to other studies that used similar cartoon-captioning procedures, ranging

from .55 to .63 (Feingold & Mazzella, 1993; Masten, 1986). Next, the six ratings for each cartoon were averaged. This average for each cartoon and the combined average of all three cartoons were used as a measure of humor production.

5.2.4 Fitness measures (for students only)

Participants completed the Sexual Behaviors and Beliefs Questionnaire (SBBQ), an extended version of the Sociosexual Orientation Inventory (SOI) developed by Miller (Miller & Caruthers, 2003; Simpson & Gangestad, 1991). The questionnaire includes 11 questions concerning sexual history (e.g.: age of first sex, number of partners in lifetime, number of one-time sexual intercourse) and 12 statements about attitudes toward sex, in which participants had to rate on a seven likert scale how much they agree with a specific statement (1 – "strongly disagree" to 7 "strongly agree") (e.g.: "Sex without love is ok," "The most exciting sex is with someone new"). All answers were standardized. See appendix A for the full questionnaire.

5.3. Results

5.3.1 Comparing comedians and students

Comedians and students were compared on the MAB subtest and caption ratings by calculating Cohen's d effect sizes for the differences in the number of correct words on the MAB test, total number of captions produced, the standardized ratings and their average across all cartoons (see Table 5.1) (Cohen, 1988).

Table 5.1

Pair-wise comparisons and effect sizes between professional comedians and students on the vocabulary test and cartoon caption producing tasks

	Comedians Mean (SD)	Students Mean (SD)	t	d
Vocabulary	27.33 (5.69)	19.55 (5.93)	6.94***	1.34
No. of captions	14.20 (4.08)	10.62 (3.90)	4.89***	.89
Cartoon 1	.67 (.63)	-.09 (.64)	3.64***	1.20
Cartoon 2	.53 (.68)	-.06 (.62)	3.10***	.90
Cartoon 3	.66 (.57)	-.08 (.57)	5.57***	1.30
Captions average	.62 (.57)	-.07 (.57)	8.07***	1.60

Comedians: n = 31, students: n =400

Positive effect size denotes that professional comedians scored higher than students.

Levene's homogeneity tests were all n.s. *** P < .001.

Since most comedians in the sample were males, a comparison between male comedians and male students was conducted on the same scales. Results were similar to those in Table 5.1. Male comedians scored statistically significantly higher on each task ($p < .001$), albeit the effect sizes were smaller (Vocabulary: $d = 1.17$; no. of captions: $d = .64$; cartoon 1: $d = 1.06$; cartoon 2: $d = .75$; cartoon 3: $d = 1.10$; captions average: $d = 1.39$).

5.3.2 Sex differences in intelligence and humor production

Sex differences on both intelligence tests and captions ratings based on students' scores, are shown in Table 5.2.

Table 5.2

Pair-wise comparisons and effect sizes between male and female students on the vocabulary test, RAPM and cartoon caption producing tasks

	Males Mean (SD)	Females Mean (SD)	t	d
Vocabulary	20.22 (6.02)	18.90 (5.80)	2.24*	.22
RAPM	7.21 (2.45)	6.82 (2.25)	1.64	.16
No. of captions	11.39 (4.14)	9.85 (3.49)	4.02***	.40
Cartoon 1	.01 (.65)	-.18 (.62)	2.92**	.29
Cartoon 2	.01 (.63)	-.14 (.61)	2.33*	.23
Cartoon 3	.02 (.58)	-.17 (.56)	3.34**	.33
Captions average	.01 (.46)	-.16 (.46)	3.76***	.38

Males: n = 200, females: n =200

Positive effect size denotes that men scored higher than women.

* P < .05

** P < .01

*** P < .001

Table 5.3 shows the relationship between intelligence tests and humor production for males and females.

Table 5.3

Students' bivariate correlation matrix with intelligence tests and the humor production tasks

	1	2	3	4	5	6	7
1. Vocabulary		.33**	.16*	.30***	.34***	.30***	.42***
2. RAPM	.33***		.13	.25***	.13	.17*	.25***
3. No. of captions	.07	-.02		.30***	.39***	.24**	.42***
4. Cartoon 1	.25***	.20**	.42***		.41***	.25***	.77***
5. Cartoon 2	.25***	.14*	.39***	.48***		.28***	.77***
6. Cartoon 3	.20**	.16*	.29***	.33***	.42***		.67***
7. Captions average	.30***	.21**	.47**	.79***	.82***	.73***	

Correlations for males above the diagonal (n = 200), for females below the diagonal (n = 200).

* p < .05.

** p < .01.

*** p < .001.

For comedians, the correlations between vocabulary scores and the number of captions produced (r = -.17), ratings for each cartoon (r = -.14, r = -.24, r = .01) and the average rating (r = -.20) were all non-significant. This cannot be attributed to a limited range on the vocabulary scores and ratings since homogeneity tests reveal similar variances to the students.

To further explore the relationship between intelligence and humor production, a GLM repeated measures ANOVA was performed with the dependent variable consisting of the three within-subject humor tasks, and with two between-subject factors, group (comedians vs. students) and sex (male vs. female), and vocabulary as a covariate. The model included three main effects (group, sex and vocabulary) and group by sex by

vocabulary interaction. Results revealed two main effects for group, [F (1, 423) = 30.26, $p < .001$], and for sex, [F (1, 423) = 10.39, $p < .001$], and a three-way interaction between group, sex and vocabulary, [F (3, 423) = 3.41, $p < .02$]. There was no significant main effect for vocabulary.

5.3.3 Humor production and fitness

Next, a factor analysis on all 22 standardized items of the SBBQ was conducted, using principal components with direct oblimin rotation. Only participants that self identified as heterosexuals were included, leaving 184 males and 187 females.

The initial analysis generated seven factors with an Eigenvalue of 1 and above. Upon further examination, three factors emerged as predominant, with 5.14, 2.79, and 1.93, Eigenvalues accounting for 45% of the variance (23%, 13%, and 9%, respectively). Therefore, a second factor analysis was performed, limiting the number of factors to three and producing three regression variables.

High loading on factor one included items that pertain to attitudes toward sex (e.g.: "I can imagine myself enjoying casual sex with different partners," "the most exciting sex is with someone new," "sex is a quick, fun way to get to know someone better"). The second factor contains items about actual sexual behavior (e.g.: number of lifetime sex partners, number of one-night sexual partners, number of times having intercourse within the first week of meeting). The third factor can be described as traditional family values (e.g.: "religion has an important role in my attitude towards sex and love," "premarital sex is wrong," "if a woman has children, they should all be from the same father"). All items on the third factor are reversed, meaning that high scores on

each of the components reflect disagreement with the statement. Men scored significantly higher on factors one [t (273) = 11.95, p < .001, d = 1.44] and marginally significantly lower on factor three [t (273) = -1.80, p = .07, d = -.21]. The correlation between factor one and two was .18 (p < .001). The two other correlations were below .1 and non-significant.

To see how each of the three factors affect humor production, a multivariate backward elimination regression analysis was performed with the three factors (attitudes toward sex, sexual behavior, and traditional family values), sex, vocabulary test and RAPM as predictors and the average humor production ratings as the dependent variable. All predictors were significant (see Table 5.4), and with a significant model [F (6, 296) = 14.064, adjusted R^2 = .26, p < .000)]. A model that included interaction parameters found no significant interactions. A model that also included age as a control yielded similar results.

Table 5.4
Parameter estimates for predicting humor production

Variable	B	SE	P	95% CI
Intercept	-.86	.11	.000	(-1.07) – (-.65)
Sex	.22	.07	.001	.10 – .35
Vocabulary	.03	.01	.000	.02 – .04
RAPM	.02	.01	.048	.00 – .05
Attitudes toward sex	-.14	.06	.015	(-.25) – (-.03)
Sexual behavior	.12	.05	.013	.03 – .22
Traditional values	.13	.05	.005	.04 – .22

CI = Confidence interval, Sex (female = 0, male = 1).

To evaluate whether humor production can predict each of the three factors separately, a series of three backward elimination regressions were conducted, with average humor production score regressed over sex, vocabulary, RAPM and each of the three factors. For the "attitude toward sex" factor, the final model was significant [F (1, 274) = 142.78, adjusted R^2 = .34, p <.001)], with only the sex (females = 0, males = 1) variable as a predictor (B = 1.17, SE = 0.10, p < .001). Males were more likely to have uncommitted attitudes toward sex.

For the "sexual behavior" factor, the final model was significant [F (2, 274) = 4.81, adjusted R^2 = .03, p <.01)], with only the humor ratings variable in the final model (B = .31, SE = .12, p < .01). Participants who had higher humor production scores were more likely to score high on the "sexual behavior" factor.

For the "traditional family values" factor, the final model was significant, [F (3, 274) = 8.47, adjusted R^2 = .08, p <.001)], with three predictors: sex, (B = -.32, SE = 0.12, p < .001), vocabulary, (B = .03, SE = 0.01, p < .001), and humor ratings, (B = -.31, SE = 0.13, p < .01). Females were more likely to have traditional family values. Participants who had high scores on the vocabulary test and those who had low humor production scores were also more likely to have traditional family values.

5.4 Discussion

The current study examined whether humor production is a mental fitness indicator of intelligence, and if individuals with good sense of humor enjoy greater mating success. The study also investigated the relationship between humor ability and intelligence in comedians compared to others. Results show that on average, men rated

higher on the humor production task than women, and comedians rated higher than students. Among students, the relationship between humor production and intelligence was stronger for men than for women, but no such relationship exists for comedians. Humor production also predicted mating success, as evidenced by actual sexual behavior. Overall, these finding are consistent with the view that humor serves as a fitness indicator signaling mate quality, and that this signal is more prominent for men (Miller, 2000a, 2000b, 2000c).

For students, there was a positive relationship between intelligence and humor production, and this relationship was especially strong for verbal intelligence. This can be expected due to the nature of the humor production tasks, which heavily relied on verbal humor. Other humor production tasks may yield different results, but it is important to remember that verbal humor is widely used in social situations and plays an important role in attracting mates (Kaufman et al., 2008; Provine, 2000). The relationship between intelligence and funniness was stronger for men. Men were also funnier than women on average, consistent with the signaling hypothesis wherein women are more receptive to humor, and men try to signal their quality and be chosen as mates (Bressler & Balshine, 2006; Miller, 2000a).

Participants with good sense of humor were more likely to have had sex at an early age, have more sex partners during their lifetime, engage in more casual sex, and have sex sooner once they meet a new partner. These behaviors are usually considered indicators of mating success that could lead to higher reproduction rates, especially for men (Buss & Schmitt, 1993; Gangestad & Simpson, 2000). Men are known to tell more jokes and attempt to be funny, especially around women (Crawford & Gressley, 1991;

Provine, 2000), and in this study produced funnier humor than women. Given the connection between humor production and intelligence, when these large efforts to make women laugh have merit and translate into mating success, this suggests that humor is an honest fitness indicator that conveys an individual's quality.

Interestingly, participants who have favorable attitudes toward uncommitted sex, and who seek quick sexual pleasure with new partners, albeit unsuccessfully, at the expense of emotional intimacy and long-term relationships, were not considered funny. It is likely that people with those attitudes try to be funny, but do not necessarily produce high quality humor. Also, individuals with traditional family values toward sex were considered less funny. Those people tend to have strong religious beliefs and might be more restrained when it comes to attempting to be funny.

It might not be surprising that comedians were considered funnier since their job is to be funny, but it is important to remember that their performances on stage utilize different humor qualities than the caption creation task. Creating humor that is performed in front of an audience takes a long time, and includes endless practice and tuning in to the audiences' reactions. It is not necessarily the same skill as producing humor in response to a vague stimulus, though both tasks probably share the same talent to some extent. The ability to be funny can manifest itself in different ways, even if comedians are not particularly familiar with this type of humor creation task.

For comedians, there was no relationship between intelligence and humor production, despite the fact that they were funnier as a group and had higher scores on the verbal intelligence test compared to the students. This is not due to the restricted range on both variables since they had similar variance scores as students, nor due to different

education levels. The lack of connection between humor and intelligence may indicate that for comedians, producing humor does not serve as a mental fitness indicator and that humor and intelligence do not always correlate. Similar to other show business professions, such as acting and singing, stand-up comedy has the potential for yielding fame, which can lead to mating success. Comedians may not need to signal their mate quality by being funny all the time, and the fact that they are on stage is enough to attract possible mates. While humor production seems to be at least partially heritable and serve as a mental fitness indicator, there is still much room for change throughout a person's life. People may improve their own sense of humor by observing what makes others laugh and learning through experience. There might be several ways to be funny. To some, having a good sense of humor is a natural and intrinsic ability, while for others good humor comes form hard work and practice. These various paths signify that humor is a complex and multidimensional phenomenon, reflecting individual differences.

One limitation of this study is the choice of humor production task. Although it is an unbiased way to measure humor quality, it is quite artificial. Humor is prominent in social situations, where people interact with each other, or as part of conversations (Martin & Kuiper, 1999). What we know about people, such as status and humor style, can influence our perception of how funny they are (Greengross & Miller, 2008). It is also possible that individuals who enjoy mating success in real life are considered funnier because of their personality or looks and regardless of the humor they produce. However, the results of this study indicate that good sense of humor has a unique contribution to mating without needing to know anything about the person's appearance or status, suggesting that something in the humor itself is an important cue for assessing

mate quality. Further studies need to take into account the various situations in which people use humor and the interactions between joke tellers and appreciators in natural settings to get a broader picture of humor and its uses.

CHAPTER 6: CHILDHOOD EXPERIENCES OF PROFESSIONAL COMEDIANS: PEERS AND PARENTS RELATIONSHIPS HUMOR USE

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Abstract

This study examines a commonly held belief that relationships with parents largely influence why stand-up comedians choose their career. Thirty one professional comedians and 400 students were given the Parental Bonding Instrument (PBI) and a new self-reported questionnaire that measures relationships and different uses of humor among peers during adolescence. Results show that comedians' recollection of how their parents treated them did not differ from that of students. Comedians also did not differ in the number of friends they had or in popularity. Comedians were more likely to be class clowns, make fun of others, laugh at themselves, and be the butt of jokes. The results support the notion that comedians use humor as a defense mechanism, or for status-seeking, and that humor develops through interaction with peers.

6.1 Introduction

There is a widely held belief that professional humorists such as comedians are sad or depressed (Janus, 1975; Janus et al., 1978). The reasons for this alleged glumness vary, but many think that its roots have to do with an unhappy childhood or troubled relationships with parents. According to this view, comedians' performances on stage serve as a coping mechanism, enabling them to escape from their daily troubles (Janus, 1975; Janus et al., 1978).

Generally, comedians are likely to come from a low socioeconomic stratum (Fisher & Fisher, 1981; Janus, 1975; Janus et al., 1978). Approximately 80-85% of comedians in two separate studies, one with 55 nationally known comedians (51 males), and another with 14 female comedians, came from low socioeconomic homes (Janus, 1975; Janus et al., 1978). The harsh conditions at home may explain why comedians went on to pursue their career.

In a study of 43 comedians (35 males, 8 females, 15 of them clowns), Fisher and Fisher (1981) found that comedians were concerned with good and evil themes. According to the study, comedians were preoccupied with these subjects, possibly because their parents placed much responsibility on their shoulders from a young age, and these future comedians had to act like adults early in their lives. They had to take care not only of themselves, but also of their siblings, and many of them worked as teens to support their parents. According to Fisher and Fisher, these untimely demands and heavy expectations put pressure on the comedians while growing up and drove them to seek approval, hence trying to be as "good" as their parents wanted them to be. Falling short of parents' expectations yielded different responses from their parents. Fathers

usually were disappointed that the comedians did not reach their fathers' high expectations, thus the comedians felt they were "bad" in their fathers' perspective. Many of the comedians' mothers expected them to fail, just waiting for this to happen. Fisher & Fisher propose that one of the main reasons for comedians to pursue a comic career was to prove that they are not bad, and they are doing "good".

Compared to a control group of actors, Fisher and Fisher (1981) observed that comedians typically described their fathers in much more positive terms, such as "good," "nice" and "respected," than their mothers. On the other hand, comedians describe their mothers as being rule enforcers, disciplinarians, punishers and aggressive critics. Many comedians acknowledged that they were spanked, hit, and punished when they violated their mothers' rules. In reaction to pictures depicting mother figures in the Thematic Apperception Test (TAT), comedians often described the women pictured with no maternal qualities and did not refer to them specifically as "mother," compared to the group of actors. Comedians did ascribe paternal identity to a father-like figure in the same task.

Contrary to Fisher & Fisher, Janus (1975) found that male comedians overwhelmingly reported being closer to their mothers, indicating mothers played a more active role in their lives than their fathers. Mothers were seen as more accepting figures than their fathers, spending more time with them, encouraging them to pursue a comic career, and better understanding their need to become a comedian. Fathers were often absent during their childhood, or generally uninterested in their career and even discouraging them from pursuing it. Fathers also failed in many cases to support their

families, forcing their mothers to go work. The fathers were also resentful of the close bond between the mothers and the aspiring comedians.

On a subsequent study with female comedians, Janus (1978) found an opposite trend. Female comedians felt closer to their fathers, and several of them reported being raised without a mother, who died at an early age. Fathers were role models for the comediennes, and they grew up admiring them. Similar to the male comedians, fathers were generally described as poor providers, and the comediennes felt they needed to support and encourage them. Their mothers were described as unsuccessful, struggling and unhappy, and most of them lived the traditional role of a housewife. Relationships with their siblings were good, overall, and interestingly, 55% of comediennes were the youngest child in the family.

Fisher & Fisher (1981) found that comedians struggled with school and were below average students. Comedians tended to be funny early in life and in school, describing themselves as being the class clowns, mocking teachers and friends and making practical jokes. In Janus' (1975) study, comedians reported having good relationships with peers and siblings, though they often felt misunderstood, being picked on and disparaged. Janus also reports that comedians' childhood experiences were marked by isolation, suffering and deprivation feelings. In his view, being funny serves as a defense mechanism against panic and anxiety. Only when on stage, can they enjoy a short period of relief from their fears. Janus concluded that comedians are sad, depressed, suspicious and angry (Janus, 1975). These findings are consistent with another study on 96 class clowns, most of them males, from a middle school (Damico & Purkey, 1978). The study found that the class clowns were more assertive, disobedient,

attention seeking, cheerful and showed leadership, but were worse students, compared to their classmates, as evaluated by their teachers. The class clowns in this study asserted that they were not well understood by their parents and had negative attitudes toward teachers and principals.

All these experiences in school, combined with their relationship with their parents, suggest that comedians become what they are in an effort to seek control, get approval from friends and family, and prove that they are good and worthy. Comedians' performance on stage, in this view, comes as a defense or compensation mechanism for their melancholy lives, whereby they attempt to channel feelings of anger and anxiety into their comedy act and seek the love of the audiences (Fisher & Fisher, 1981). Using humor as a coping mechanism is not unique to professional comedians; many ordinary children use humor to deal with uncertainty, stress and anxiety (Fuhr, 2002).

The Janus and Fisher & Fisher studies rely heavily on a psychoanalytical approach that is largely based on tests with low reliability and validity and subjective interpretation (e.g. Wood et al., 2001; Wood et al., 2003). This makes it hard to come to robust conclusions about comedians' childhood and early experiences, and can explain the contradictory results in their studies, despite using similar samples. Comedians today might be quite different from the ones studied in the past, and the comedy scene has changed dramatically since them. There are many more professional comedians and aspiring comics, and many more comedy clubs that host several performances each week.

In addition, Fisher & Fisher (1981) compared comedians to actors and other entertainers. These comparisons might not be adequate to assess whether comedians

indeed had unique childhoods and distinct relationships with parents, since all groups are unique vocational groups that do not represent most of the population.

This study attempts to answer two questions: 1) Do professional comedians have unique relationships with parents compared to others? and 2) What were their experiences in school and the nature of the relationships they had with peers? The results could shed light on what factors influence the pursuit of comedy as a career choice.

6.2 Method

6.2.1 Participants

Thirty-one professional comedians (28 males, 3 females) were recruited through a local comedy club in Albuquerque, NM. The comedians had an average age of 38.9 years (SD = 8.6, range 27-58). Comedians had an average of 15.3 years of education (SD = 2.6). Twenty two participants (71%) self-identified as White, 5 participants (16%) as African American and 4 participants (13%) as Hispanic.

Four hundred undergraduates enrolled in psychology courses at the University of New Mexico participated in the study and received partial course credit for participation. The average age of the students was 20.6 years (SD = 4.7, range 18-57). Participants had an average of 13.4 years of education (SD = 1.3). Two hundred thirty-one participants (58%) self-identified as White, 117 participants (29%) as Hispanic, 19 participants (5%) as Asian, 14 participants (3.5%) as American Indian, 12 participants (3%) as African American, and 5 (1.5%) as other.

6.2.2 Relationship with parents

To assess relationships with parents, participants completed the Parental Bonding Instrument (PBI) (Parker, Tupling, & Brown, 1979). The PBI is a 25-item questionnaire that measures parental styles as perceived by the participant in retrospect. The participants were instructed to answer how much a described behavior or attitude reflected their parent in the first 16 years of their lives. The answers range from 1 - "very like" to 4 - "very unlike." Twelve items measure the parent's "care" (e.g. "Was affectionate to me"), and 13 measure "overprotection" (e.g. "Tried to control everything I did"). For each parental style, the scores for those items are summed. The instrument is completed for both mothers and fathers separately.

The PBI has good reliability and validity (Lizardi & Klein, 2005; Wilhelm, Niven, Parker, & Hadzi-Pavlovic, 2005; Wilhelm & Parker, 1990). Cronbach's α's for the current study revealed high internal consistencies: mother's care = .93, father's care = .93, Mother's overprotection = .86, and father's overprotection = .86.

6.2.3 Relationship with peers

To measure relationships with peers, participants completed the Peer Relationships and Humor Questionnaire, which was developed specifically for this study and consists of questions about social life and humor used in school. There were eight retrospective questions, repeated for each of three grades (6^{th}, 9^{th}, and 12^{th}). Participants had to compare themselves to others on a scale from 1 to 7, where 1 means they were below average on this question and 7 means they were above average. The questions were:

1. Compared to others, how many same sex friends did you have during the following periods of time?

2. Compared to others, how many opposite sex friends did you have during the following periods of time?

3. Compared to others, how often did others seek you out for social activities during the following periods of time?

4. Compared to others, how popular were you during the following periods of time?

5. Compared to others, how often did you make fun of yourself during the following periods of time?

6. Compared to others, how much were you considered as the class clown during the following periods of time?

7. Compared to others, how much were you the butt of the jokes of other people during the following periods of time?

8. Compared to others, how much did you make fun of other people during the following periods of time?

6.3 Results

An index for each question on the Peer Relationships and Humor Questionnaire was calculated, based on the average score for each question in the three time periods. A correlation matrix of PBI with each of these indices, for comedians and students is presented in Table 6.1.

Table 6.2 shows the means and standard deviations for each scale for comedians and students. Using t-test, I compared the differences between comedians and students on each of the four scales of the PBI. None of the differences were statistically significant.

Table 6.1

Bivariate correlations of PBI with the Peer Relationships and Humor Questionnaire indices for comedians and students separately

	1	2	3	4	5	6	7	8	9	10	11	12
1. Mother care		-.28	-.35	-.15	.08	-.19	-.08	-.21	-.06	-.24	.10	-.06
2. Mother overprotection	-.40**		.26	.18	-.25	.06	-.11	-.18	.18	.24	.24	.26
3. Father care	.27**	-.16**		-.14	.30	.14	.14	.17	.33	.38	-.02	.06
4. Father overprotection	-.18**	.45**	-.37**		.10	-.30	-.17	-.30	.10	-.07	.16	.25
5. Same sex friends	.07	-.05	.06	-.03		.40*	.30	.55**	.25	.44*	-.09	.40*
6, Opposite sex friends	.07	.01	.01	.07	.38**		.51**	.64**	-.01	.46*	-.01	.33
7. Seek social activities	.11*	-.08	.15**	-.01	.34**	.43**		.67**	.33	.26	.09	.40*
8. Popular	.13*	-.11*	.09	.01	.43**	.53**	.59**		-.01	.59**	-.19	.34*
9. Made fun of oneself	.04	-.04	.11*	-.09	.20**	.17**	.21**	.23**		.17	.42*	.31
10. Class clown	.04	-.04	.01	-.06	.15**	.19**	.24*	.26**	.35**		.13	.36*
11. Butt of the jokes	.03	.02	-.01	-.10	.04	-.04	-.09	-.07	.29**	.39**		.21
12. Made fun of others	.11*	.01	.07	-.05	.08	.07	.16**	.12*	.35**	.34**	.27**	

Correlations for comedians are above the diagonal (n=31), for students below the diagonal (n=400).

* $p < .05$.

** $p < .01$.

Table 6.2

Means and standard deviations for PBI scales by group

	Students (n=400) Mean (SD)	Comedians (n=31) Mean (SD)
PBI - mother		
Care	28.26 (7.88)	28.00 (6.61)
Overprotection	14.41 (7.64)	13.87 (6.63)
PBI - father		
Care	24.04 (9.13)	22.32 (9.77)
Overprotection	12.62 (7.89)	10.56 (5.85)

Since most of the comedians in the study were males, a separate analysis that included only male participants was conducted. The results were similar to the entire sample and no group differences were found.

Next, I compared the two groups on each of the items in the Peer Relationships and Humor Questionnaire. Results are shown in Table 6.3, along with Cohen's d (Cohen, 1988). There were no significant differences in any of the four scales that measure social relationships with peers. In contrast, comedians scored significantly higher on each of the questions that pertain to humor activities with peers.

Table 6.3

Pair-wise comparisons and effect sizes between professional comedians and students on the Peer Relationships and Humor Questionnaire indices

	Students (n=400) Mean (SD)	Comedians (n=31) Mean (SD)	t	d
Same sex friends	4.67 (1.25)	4.58 (1.69)	-0.29	-0.06
Opposite sex friends	4.39 (1.39)	4.14 (1.75)	-0.95	-0.16
Seek social activities	4.72 (1.30)	4.54 (1.18)	-0.72	-0.14
Popular	4.34 (1.22)	4.30 (1.27)	-0.20	-0.04
Made fun of oneself	3.88 (1.40)	4.50 (1.80)	2.32**	0.38
Class clown	3.12 (1.74)	4.65 (1.64)	4.72***	0.90
Butt of the joke	3.05 (1.28)	3.60 (1.30)	2.32*	0.43
Made fun of others	3.47 (1.35)	4.35 (1.75)	3.41***	0.56

Positive effect size denotes that professional comedians scored higher than the students. df for all comparisons are 427.

* P < 0.05.

** P < 0.01.

*** P < 0.001.

Again, a comparison between male comedians and male students was conducted on the same scales. Results were similar to those in Table 6.3. There were non-significant differences on the first four scales. For the other four scales, male comedians scored higher on each dimension**:** made fun of oneself, [t (226) = 2.86, p < .01, d = 0.51]; class clown, [t (226) = 3.07, p < .01, d = 0.65]; butt of the joke, [t (225) = 1.19, n.s., d = 0.24]; made fun of others, [t (226) = 2.85, p < 0.01., d = 0.53].

Examining sex differences with the students' sample reveals two significant differences. Males were more likely to report being the class clown [t (396) = 6.55, p < .001, d = 0.66], and more likely to be the butt of the joke [t (395) = 3.84, p < .001, d =

0.39]. There was a slight tendency for males to be more likely to make fun of others, [t (398) = 1.75, $p < .1$, d = 0.18].

To examine the unique contribution of each of the four indices of the Peer Relationships and Humor Questionnaire in which groups differences were revealed, I conducted backward LR logistic regression, regressing group (comedians, students) on the four scales. Two predictors were significant in the final model: class clown [B = -.40 (.12), $p < .01$] and make fun of others [B = -.29 (.14), $p < .05$].

6.4 Discussion

The purpose of this study was to examine whether professional comedians differ from others in their relationships with parents and peers during childhood and adolescence. Overall, there were no differences in the way comedians describe how their parents treated them, compared to the students' descriptions. Major differences emerged in respect to the way they used humor with their peers. Results also showed that relationships with parents are largely independent of relationships with peers.

The results suggest that the interactions of to-be-comedians with people within the same age group are important to their development as comedians. This is consistent with the fact that humor is a social phenomenon. There is abundant evidence showing that people try to make others laugh and laugh more when other people are around, and that humor plays an important role in peer bonding and attracting mates (Greengross & Miller, 2008; Lundy et al., 1998; Martin & Kuiper, 1999; Provine, 2000). Making fun of others and being the class clown allow individuals to connect with others. Granted, not all class clowns become comedians, but those who do might observe how others enjoy their humor, and decide to advance their skills toward the pursuit of a comic career.

Comedians' use of different types of humor growing up might have built their confidence, provided important experiences and contributed to the development of their personality.

Comedians in this study also had a tendency to make fun of themselves and be the butt of the joke. This tendency to lower oneself was not related to any social benefits for comedians, whereas it was moderately linked to popularity and number of friends, in both sexes, for students. People use self-deprecating humor in a variety of ways, some beneficial and some not. Self-deprecating humor can either involve disparaging remarks that put down oneself in a hostile way, or can be friendly remarks in good spirit, that are not taken seriously (Greengross & Miller, 2008; Martin et al., 2003). The comedians in Fisher & Fisher's (1981) study perceived themselves as unworthy, compared to actors and other entertainers. They were more likely to make negative remarks about themselves and view themselves as small, compared to the other groups. These findings might reflect feelings of uncertainty or lack of confidence among comedians who produce self-deprecating humor that others regard as unfunny and hence, lower the perceived popularity of the joke teller. Corroborating this is the strong relationship between self-deprecating humor and being the butt of the joke among comedians, suggesting they indeed used a negative style of humor. On the other hand, students who use a keen self-deprecating humor that makes others laugh, enjoy higher esteem among friends.

Consistent with previous studies, being the class clown was related to being popular in general, and is also associated with having more friends from both sexes (Warnars-Kleverlaan, Oppenheimer, & Sherman, 1996). These relationships are stronger

for comedians than for students, suggesting that comedians use humor as a tool for social approval.

Consistent with previous studies, there were overwhelmingly more male comedians in this study (Fisher & Fisher, 1981; Janus, 1975). Despite changes in the comedy industry over the last few decades, the percentage of female comedians has remained at about 10-15%. It is not yet clear why there are relatively few female comedians. Also, more males report being the class clowns, something that is consistent with previous studies (Damico & Purkey, 1978; Fisher & Fisher, 1981; Janus, 1975).

It is not clear from this study how comedians' relationships with both parents and peers may have shaped their use of humor. The data from this study neither confirm nor contradict the idea that comedians' humor developed as a coping mechanism in the face of adverse circumstances. While it is true that sense of humor is heritable to some degree (Cherkas et al., 2000; Manke, 1998), humor is dynamic and changes throughout one's life. It is not known how comedians' humor is similar to their parents, but it seems that they develop their sense of humor in response to other people and to their own experiences and feelings (Fisher & Fisher, 1981; Janus, 1975).

One limitation to this study is that the comedians were older than the students, and thus might not recall their childhood experiences very accurately. However, the fact that comedians expressed both positive and negative attributes about themselves growing up may indicate that the bias is not large. It is also possible that while the effect of parents on adolescence is not large, parents do influence the development of children's humor in early years (McGhee & Chapman, 1980). Further studies should take a deeper

look at the interactions of comedians among peers and others to better understand how and to what degree this dynamic might influence the decision to become a comedian.

CHAPTER 7: CONCLUSION

In recent years there have been increasingly growing numbers of scientific studies of humor. The purpose of this study is to expand some of the knowledge on the subject and test specific hypotheses related to the role of humor in light of sexual selection theory and life-history theory, and further explore the life and characteristics of professional stand-up comedians. Overall, this study strengthens the view that humor is a complex phenomenon, with many facets, that should continue to be studied from many different perspectives.

The results of the study lend further support to the role of humor production in sexual selection and mating, and how people, especially men, might use it as a mental fitness indicator. However, the results also show how producing humor serves different functions depending on the individual and the context in which it is used. Specifically, there seem to be differences between daily, spontaneous uses of humor by ordinary people and strategic uses of humor by others whose expertise is humor production.

It is possible that some people have a natural and innate ability to make others laugh, while others need to work hard to be funny. As with other mental fitness indicators, such as artistic, musical and language capacity, which signal the ability to learn culture-specific modes of display, humor production ability can improve with practice and experience. People can learn what makes other people laugh in certain situations, or what type of humor a specific audience likes. There are also many techniques that could improve one's funniness. For example, people can learn to use incongruity and surprise in a given situation or joke. Granted, there are many individual differences in the ability to learn to be funny. Nonetheless, just like intelligence, people

have an innate range of humor production ability; some will maximize their full potential, and some will not.

Humor production serves as a mental fitness indicator for people using it in social situations, but life-history theory better explains the use of humor among comedians. Life-history theory focuses on strategic trade-offs in allocation given minimal between-individual differences in genetic quality; while fitness indicator theory focuses on between-individual differences in genetic quality that may swamp the strategic trade-offs. For example, trade-off theory might predict negative phenotypic and genetic correlations between intelligence and humor production ability (the more of one you have, the less you can afford of the other), whereas fitness indicator theory might predict positive correlations between them, due to a common dimension of underlying genetic quality (low mutation load).

Therefore, it is plausible that certain types of humor production will underlie genetic quality, while others will be used as a tradeoff between humor production and other desired traits in a potential mate. The ability to experience humor in non-serious social incongruity circumstances represents the more spontaneous, natural environment of humor, and hence, it is more likely to serve as a mental indicator. It does not require training, hard work or practice. On the other hand, stand-up comedians might not have been naturally funny, but due to particular experiences early in their lives, they wanted to be funny and tried hard to achieve this goal. Though they scored higher on verbal intelligence than the students, among comedians, there was no correlation between intelligence and humor production. Intelligence may affect humor production indirectly by driving comedians' effort to find ways to be funny. Comedians may recognize that

being funny yields social and mating benefits, and they want to compensate for the absence of other desired traits. For comedians, producing humor can be used as a tradeoff to enhance one's status (as comedians are considered high status individuals), which can enhance desirability as a mate for male comedians, who are the majority. Although the tradeoff may not be apparent or necessarily conscious to the individual, it is an overt decision to pursue humor beyond the daily social uses of it.

Because in the general population there is a connection between intelligence and humor production, people might mistakenly attribute this connection to comedians. There may not be a direct connection between intelligence and humor production for comedians, but they are, on average, more intelligent; thus, this assumption is not necessarily wrong. Stand-up comedy is a modern phenomenon that has existed for approximately 50 years, and it is possible there were no evolutionary pressures to favor comedians' specific type of humor. Even though jesters and clowns have existed throughout history, in many cases, they were low status, and it is not clear how desired they were as mates.

While large portions of this study concentrated on the role of humor within the mating context, humor production and appreciation go far beyond that. Most people enjoy humor in social situations, either by listening to others or producing it themselves. Humor production can be used as a social lubricant to put others at ease, release tension between people, make people more receptive to the listener, reinforce or strengthen social interactions or increase in-group cooperation and alliances. On the other hand, laughter can be used to manipulate the emotions of others to benefit oneself, mitigate problems within the group, help outsiders to integrate into the group, draw the line between current

and outside members of the group or signal reception of others (Gervais & Wilson, 2005).

Note that if humor production is a fitness indicator, it can not only serve as a means to attract mates, but could also enhance one's status within a group, release tension between people, and so on. For example, within the social context, if humor production signals genetic quality, it means that the appreciator can benefit by allying with the signaler. On the other hand, laughing at a high status individuals' joke can signal acceptance of submissiveness and validate the hierarchy between the presenter and the appreciator, regardless of the genetic quality of the joke teller. Thus, the fitness indicator theory is also applicable to intra-sex interactions (or non-mating interaction if it involves individuals from both sexes). This can indirectly enhance one's reproductive success, or may not relate to mating at all.

No doubt future studies need to look at the many functions of humor, in various situations, in ordinary as well as in specialized groups. Only a comprehensive study of humor that incorporates evolutionary based ideas and others can give us a complete picture of this complex phenomenon.

APPENDICES

APPENDIX A: SEXUAL BEHAVIORS AND BELIEFS QUESTIONNAIRE

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At what age did you first have intercourse?

How many times have you had intercourse in the past month?

With how many partners have you had intercourse in your lifetime?

With how many partners have you had intercourse in the past year?

With how many partners are you likely to have intercourse in the next five years? (please give a specific, realistic estimate.)

With how many partners have you had intercourse on one and only one occasion?

How many times have you had intercourse with two or more different partners within the same 24-hour period?

How many times have you had intercourse with two or more different partners within the same 7-day period?

How many times have you had sexual intercourse with a new partner within the first week of meeting them?

How many times have you had sexual intercourse with an ex-partner more than a month after having split up with them?

Being as honest as possible, please indicate how much you agree or disagree with the following statements, by circling the appropriate number on the scale.

	I strongly disagree			I feel neutral			I strongly agree
Sex without love is OK, morally	1	2	3	4	5	6	7
I can imagine myself enjoying casual sex with different partners	1	2	3	4	5	6	7
Religion has an important role in my attitudes towards love and sex	1	2	3	4	5	6	7
The most exciting sex is with someone new	1	2	3	4	5	6	7
I would have to be emotionally close to someone before I could fully enjoy having sex with them	1	2	3	4	5	6	7
I seem to value emotional intimacy more than sexual pleasure	1	2	3	4	5	6	7
It's immoral for single people to have sex with married people	1	2	3	4	5	6	7
It's OK for a woman to raise a child as a single parent	1	2	3	4	5	6	7
Premarital sex is wrong	1	2	3	4	5	6	7
If a woman has children, they should all be from the same father	1	2	3	4	5	6	7
Sex is a quick, fun way to get to know someone better	1	2	3	4	5	6	7
Sometimes I feel sexual attraction to someone new within a few moments of seeing them	1	2	3	4	5	6	7

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