ABSTRACT

Title of Dissertation: CLIENT LAUGHTER, NOT A LAUGHING
                                     MATTER: THE INTERPERSONAL ROLE
                                     OF CLIENT LAUGHTER IN
                                     PSYCHOTHERAPY

                                     Shudarshana Gupta,
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Dissertation directed by: Professor Clara E. Hill, Psychology Department

The purpose of this study was to investigate the presence of 5 characteristics

(cheerfulness, politeness, reflectiveness, nervousness, and contemptuousness)

in client laughter, and to examine the relationship between the presence of these

5 laughter characteristics and client attachment styles as observed in psychotherapy.

The primary investigator, and 6 undergraduate students coded 813 laughter episodes,

which were nested within 33 clients, nested under 16 therapists, in one psychotherapy

clinic. Judges rated the intensity of each laughter episode in terms of the presence of

these 5 laughter characteristics. Initial client attachment style was measured using a

self-report measure. Laughter occurred on average, in 9 out of 10 sessions, and was

rated highest on politeness and reflectiveness, followed by cheerfulness and

nervousness, and was rated lowest on contemptuous. Initial attachment style of

the clients influenced the characteristic observed in client laughter, throughout

therapy. As theorized by Nelson (2012) clients seemed to use laughing to both connect and disconnect with the therapist. Implications for practice and research are discussed.

CLIENT LAUGHTER, NOT A LAUGHING MATTER: THE INTERPERSONAL ROLE OF CLIENT LAUGHTER IN PSYCHOTHERAPY

by

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Dissertation submitted to the Faculty of the Graduate School of the
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Dedication

I dedicate this dissertation to the memory of my father Sumit Gupta (1949–2009), whose role in my life was, and remains, immeasurable.

Acknowledgement

This dissertation could not have been completed without the support that I have received from so many people over the years. I would like to express the deepest appreciation to my doctoral advisor Prof. Clara E. Hill for the continuous support of my Ph.D. study and related research. Without her guidance, motivation, and immense knowledge this dissertation would not have been possible.

Besides my advisor, I would like to thank the rest of my thesis committee: Prof. Dennis Kivlighan for assisting me with the data analysis process, and Prof. Charles Gelso, Prof. Mary Ann Hoffman and Prof. Edward Lemay for their insightful comments and encouragement. Thank you for helping me broaden my research and examine it from various perspectives.

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Last but not the least, I would like to thank my family: my mother and sisters and brothers in law for their patience and understanding throughout writing this thesis and my life in general.

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Chapter 1: Introduction

Laughter in the clinical hour may mean many things. It may represent connection

or detachment. It can invite closeness, or it can be a barrier to it. Some mutual

laughter represents delight in the recognition of transformation, whereas other

laughter may serve as a resistance to growth and change. (p. 159, Nelson 2012)

The process underlying laughter in psychotherapy remains largely unknown. Most

of the existing work on laughter is theoretical and anecdotal in nature (Falk &Hill,

1994). Although the clinical perspective can provide us with several thought

provoking ideas regarding the role of laughter in psychotherapy, empirical research is

required to substantiate the proposed theories.

Some clinical theorists argue that strong laughter is an expression of an optimal

goal state contained in such constructs as actualization, psychological health, personal

growth, integration, authenticity, maturity, adjustment, and healthy life outlook (e.g.,

Greenwald, 1975; Levine, 1976; Mahrer, 1978, 1983; Mindess, 1971, 1976;

O'Connell, 1981; Shaw, 1960). Other theorists understand laughter as sign of serious

disturbance (Levine, 1976; Noyes & Kolb, 1963), as an expression of dangerous

unconscious processes (Bergler, 1956; Freud, 1960; Grotjahn, 1970; Harman, 1981;

Koestler, 1964; Plessner, 1970), and as a defensive avoidance against internal or

external threat (Ansell etal., 1981; Kubie, 1971; Zuk, 1966). Given that laughter may

or may not be a therapeutically welcomed event more empirical work is needed to

clarify the constructs of laughter for researchers, and provide clinicians a basis for

understanding the meaning of client laughter.

The most promising empirical work on client laughter appears to be a series of

studies done by Gervaize, Mahrer, Markow and Boulet (1984). Gervaize et. al (1984) were interested in what therapists do to promote strong laughter in their clients. They developed categories of risky verbal behavior that might lead to strong client laughter. These categories were directed interpersonal risk behavior, defined risk behavior by patient or other, ridiculous explanation/description of patient, instruction to carry out affect-laden behavior with heightened intensity, carrying out risk behavior as/for the patient, risked being of other person or entity, excited pleasure over risked behavior, and directed risk behavior toward the therapist.

Gervaize et al. (1984) reported that 73.3% of therapist statements preceding events rated "strong laughter" fit into one of the risky behavior categories in their system. They concluded that therapist risky behavior was highly correlated with strong client laughter. However the remaining 26.7% of the therapist statements preceding client laughter observed did not fit into any of the categories they constructed.

Falk and Hill (1994) point out that, although these studies provided a necessary foundation for the study of laughter in psychotherapy, certain limitations with Gervaize et al.'s (1984) work were evident. First, all therapists used for the study had identified themselves as chiefly experiential in orientation. Finding might be different with therapists with differing theoretical orientation. Second, Gervaize et al. (1984) did not adequately define what they considered strong laughter. And third, researchers neglected the alternate hypothesis that therapist humor might account for some of the instances of client laughter.

Noting these limitations, Falk and Hill aimed to replicate and expand the study by

Gervaize et al. (1984). They examined if client laughter was in fact a positive event in therapy, and if risky behavior necessarily predicted all client laughter, or if humorous therapist interventions were a factor as well.

Falk and Hill (1994) therefore investigated the relative helpfulness of these two types of therapist interventions, Gervaize et al.'s (1984) risky behavior categories and a newly designed category of humor interventions. Trained judges were used to focus upon and rate what the therapist did prior to client laughter in an examination of eight cases of brief psychotherapy. They found that for humor interventions, the categories of release of tension led to the most client laughter. For risk interventions, ridiculous description of client led to the most client laughter. In general, humorous interventions led to more client laughter than did interventions that encouraged clients to take risk. They conclude by pointing out that circumstances that moderate the effects of therapist interventions however need to be examined. For example, a good working alliance and or real relationship may be necessary for the counselor and client to laugh together. In addition, some clients may laugh more than do other clients. Researchers suggest that these are all questions that could be pursued in future research to learn more about the meaning of client laughter.

In an attempt to comprehend this often-ignored behavior, in the present study we aim to understand the role of laughter in the therapeutic relationship. The presence or absence of laughter in the therapeutic relationship could play an important role in the real relationship that exists between the client and the therapist. In other words, laughter could either impede or assist the extent to which the client perceives the therapist as genuine and authentic and vice versa. When it comes to the working

alliance, laughter could either ease the difficult work of therapy, or be used defensively, thus hindering the therapeutic work. Lastly, laughter might also play a role in the transference and countertransference configuration between the client and the therapist. For example, a client might perceive a therapist's laughter as a cruel reenactment of childhood experiences of bullying.

Thus, the manner in which laughter plays out between the client and therapist might act as a barometer for therapeutic relationship. Perhaps if laughter is used in a manner that is genuine it can create bonding between the client and the therapist, facilitating a safe space in which difficult themes can be explored. If this is the case, it would be important to explore if there is a particular type of facilitating laughter. The research in social psychology suggests that those with whom we laugh with are perceived as our in-group members, whereas those at whom we laugh at are seen as the out-group (Long & Graesser, 1988; Wilkins & Eisenbraun, 2009). It would be intriguing to examine whether this kind of distinction takes place in psychotherapy. If a client and therapist laugh together, does this result in the client viewing the therapist in his or her in-group, or in other words, on their side?

On the other hand, laughter might be seen as an enactment of the client's transference reactions. For example, from early interpersonal interactions, clients might unconsciously learn that by laughing, others are less likely to be angry with him or her (Nelson, 2008). Therapists similarly might resort to laughter to manage their own anxiety or other countertransference reactions (Buckman, 1994).

Laughter therefore is a complex interpersonal behavior that might be interpreted in many ways in psychotherapy. Based on the context, it can be a powerful indicator

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of the strength of the therapeutic alliance or a defensive behavior that becomes a barrier to therapy. The present study, therefore, is an attempt to understand the multifaceted meaning of laughter in psychotherapy. We hoped to do this by establishing a category system of the different characteristics of laughter and the correlations between these characteristics. In addition, we also wish to examine the relationship between laughter type and attachment style. By paying attention to the type of laughter, therapists can be more attuned to the client's interpersonal dynamics, and begin to decipher whether the laughter is inviting closeness or creates a barrier between the therapist and the client. Such a study could provide therapists with valuable interpersonal information, which in turn can help to understand their clients' relational dynamics and the nature of the therapeutic relationship.

Chapter 2: Review of the Literature

To begin to understand the role of laughter, a complex yet cross-cultural behavior, in psychotherapy, we first discuss current finding in the area of social psychology, the impact of laughter on the body, and the role of laughter in psychotherapy in the following sections.

As noted in earlier, laughter is a shared behavior that helps us form social bonds. Although most of us associate laughter with humor, if we were to explore when and with whom we exhibit the behavior, its interpersonal nature becomes apparent. We are 30 times more likely to laugh if we are with other people than if we are on our own, and most laughter occurs in conversations with friends (Provine, 1996; Vettin & Todt, 2004). Laughter reflects a basic positive social emotion, one that signals that our intent is play, not assault. Across cultures laughter helps form and reinforce social relationships. As Provine (2001) put it, "Laughter, like speech, is a vocal signal that we seldom send unless there is an audience. Indeed, laughter is the quintessential human social signal" (p. 44).

Laughter is a universal behavior that is exhibited by most members of our species (Provine, 2001). For example, Sauter, Eisner, Ekman, and Scott (2010) examined the universality of human emotional vocalizations, and found that in the Himba of North Namibia, a culture uncontaminated by Western influences, the only positive vocal emotional expression that was bidirectionally recognized was an expression of amusement, which was always expressed with laughter. In other words, the Himba were able to recognize laughter as a sign of amusement in the English and vice versa.

These studies reinforce the hypothesis that laughter is innate behavior programmed by our genes, not by the vocal community in which we grow up (Provine, 2001).

Across cultures, infants typically begin to laugh at 3 to 4 months, and laughter becomes a coordinated and shared experience between the caregiver and infant within the first year (Nelson 2008). Laughter helps cement the bond between the parent and the newborn. The predictable pattern in which this behavior develops provides further evidence that laughter is an innate behavior that has evolutionary value in ensuring the survival of the infant. Smiling and laughter signal to the caregiver that the infant is positively aroused (Cassidy 1999), and provide incentive to the caregiver to extend positive interactions (Bowlby 1969).

Although laughter helps strengthen social bonds, it also has a dark side. As Bergson (1911) claimed, laughter could be a means of forcing compliance to group norms through humiliation or "ragging." In many situations, social outliers are excluded from the in-group via laughter. As Provine, (2001) eloquently stated, "Laughter is a harlequin that shows two faces—one smiling and friendly, the other dark and ominous. Mardi Gras floats and sinister mechanical jokesters of old carnival fun houses mirror this duality—a volatile mix of gay and macabre that speaks directly to the emotional centers of our brain. Laughter can serve as a bond to bring people together or as a weapon to humiliate and ostracize its victims. Despots have rightly feared its power and have savagely repressed it" (Provine, 2001, p. 16).

Given that laughter is such a ubiquitous and cross-cultural behavior with emotional and social potency, it is surprising that it has been largely ignored in the field of psychology. Scott (2013) argued that perhaps this is because psychologists

have generally attempted to understand human behavior by focusing on abnormalities or negative emotions. She pointed out that psychology has been criticized for having a profound negative bias. Second, Scott pointed out that laughter often is trivialized and believed to be unworthy of scientific study. Provive (2001) agreed with this hypothesis, commenting that people have a tendency to undervalue the familiar, ensuring that "laughter has always hovered at the threshold of scientific scrutiny. There may be no other area of human behavior where so many important questions remain unsolved…" (p. 3). According to Provine, laughter provides a lot of "scientific leverage," given that as a behavior is species-typical and predictable in structure, which makes it easier to explore if everyone performs it the same way, and neural mechanisms are easier to track down if everyone has them.

Another advantage that laughter affords is that it is usually not under conscious control (Provine, 2001) thus making it an unobtrusive index for the health of the therapeutic alliance. In Provine's (2001) words since laughter "is largely unplanned and uncensored, it is a powerful probe into social relationships." (p. 3) Laughter, therefore, seems to be a behavior that is both universal and nuanced. Using research in social psychology, developmental psychology and psychotherapy to inform our work, the present study is an attempt to understand how this complex behavior both benefits and hampers the relationship between the therapist and the client in psychotherapy.

We Cannot Tickle Ourselves: The Social Function of Laughter

Provine (2000) defined laughter as "an instinctive, contagious, stereotyped, unconsciously controlled, social play vocalization that is unusual in solitary settings"

(p. 215). For many of us the first time we laughed was usually in response to being tickled. Although children instinctively laugh at being tickled, they cannot tickle themselves and make themselves laugh. This finding has intrigued researchers, who speculate that laughter is largely a social phenomenon. For example, Panksepp (2000) suggested that perhaps the reason we do not laugh when we tickle ourselves is that the neural mechanism motivating this response is controlled by social cues. In other words, laughter at being tickled is largely determined by the perceptions of being wanted and chased by another and being involved in social play. Tickling and laughter, therefore according to Panksepp, "help weave individuals into the social fabric in which they reside, in various hues of position and dominance" (p. 183).

In order to explore the underlying social dynamics involved in the act of tickling and response of laughter, Provine (2000) conducted a survey of 421 males and females between 8 and 86 years of age to examine when, how, and between whom tickling predominantly occurs. He found that people tickle and are tickled overwhelmingly by friends, family, and lovers, but rarely ever tickled by a stranger. Most participant also reported that the rationale for tickling someone was ''to show affection,'' followed by ''to get attention." These findings further support that laughter as a result of tickling largely occurs within close social relationships.

Provine conceptualized tickle battles as "the most benign form of human conflict." Laughter therefore occurs because tickling is considered to be mock fighting. It is a form of social play that connects individuals in affectionate intimate relationships. For example, when infants laugh at being tickled by caregivers, they communicate that they enjoy the social interaction. As Provine puts it, laughter

signals. ''I like it; do it again!'' Crying and fending off the other person signals that the game has gone too far.

From an evolutionary perspective, the cross-cultural nature of laughter might lead us to hypothesize that it provided a survival value to those who exhibited it. Laughter might be conceptualized as an adaptation that helped our ancestors get around the world, survive, and reproduce. Those individuals who displayed laughter increased their chances for survival, which encouraged laughter across different geographical locations and cultures. Perhaps those who laughed were also more able to bond with others more efficiently, ensuring support and safety from a larger group. (Provine 2000)

Provine (2000) also emphasized that laughter reveals us as social mammals, and that given its social and emotional potency, laughter is worthy of scientific scrutiny. Yet, as he pointed out, laughter "has hovered at the threshold of scientific scrutiny. And when scientists have turned their attention to laughter, it has been most often directed to the related issues of humor, personality, health benefits, or social theory, not laughter itself" (Provine, 2000).

Next, to address the question when we laugh, Provine and Fischer (1989) asked students to record in diaries for one week the situations and conditions in which they laughed. Results indicated that once the social stimuli of mass media (television, radio, books, etc.) was excluded, laughter was 30 times more frequent in social than solitary situations.

In another study, Provine (1993) examined the social context of laughter in a naturalistic setting by secretly observing 1,200 instances of spontaneous laughter in

humans a variety of human interactions, ranging from suburban shopping malls to a university student union. In each instance of laughter, he recorded the gender of the speaker (the person speaking immediately before laughter occurred) and of the audience (the person listening to the speaker), whether the speaker and the audience laughed, and what the speaker said immediately before the laughter. Although often we associate laughter with a reaction to humor, Provine found this to be the case in only 10-15% of the instances. Overall, the findings showed that laughter was largely in response to everyday mundane comments that were not even remotely humorous like, ''Where have you been'' or ''It was nice meeting you, too.'' Provine therefore proposed that the required stimulus for laughter is not a joke, but another person. He also reported that there are substantial gender differences in laughter patterns. Although both sexes laughed a lot, in cross-gender conversations, females laughed 126% more than their male counterparts. Provine suggested that this might be a reflection of a cross-cultural pattern in which women do most of the laughing, and males tend to more frequently provoke laughter. This pattern seems to develop at 5 to 6 years of age, when joking first develops.

These patterns in male and female laughter might suggest that laughter is a factor in meeting, matching, and mating. Further support for this comes from Grammer and Eibl-Eibesfeldt (1990) who observed that among young German adults the more a woman laughed during an encounter, the greater was her self-reported interest in the man to whom she was talking. Similarly, men were most interested in women who laughed in their presence. Lastly, the laughter of the woman rather than the man is most predictive of a promising relationship.

Provine (2000) proposed that these laughter patterns imply that laughter is spontaneous and relatively uncensored, and therefore an indicator of our true feelings. He argued that genuine laughter, like crying, is almost impossible to produce on command and, therefore, might be conceptualized as an honest signal of the positive emotional arousal in another person.

Next, across cultures, laughter is not only a quintessential sign of joyful affect, but, as Panksepp (2000) pointed out, laughter also causes mirth in others. Laughter is contagious, and believed to transmit a mood of positive social solidarity. Perhaps then, a function of laughter is to create bonding and trust in a social group.

Findings that humans social groups evolved to be considerably larger than those of other primates (Aiello & Dunbar, 1993; Dunbar, 2009; Gowlett, Gamble, & Dunbar, in press) has given rise to the hypothesis that laughter may have evolved into its present human form specifically to break through the ceiling imposed by more conventional primate bonding processes such as grooming (Dunbar, 2012). Social bonding in other primates usually occurs through grooming, which in turn increases endorphin activation and thereby strengthening the bond between group members. (Curley & Keverne, 2005; Depue, Morrone-Strupinsky, et al., 2005; Machin & Dunbar, 2011). In other words, grooming occurs only between the dyad and not the larger social group, hence grooming as form of bonding puts limitations of the number of individuals who can bond at any given time. When an individual laughs with a group however, bonding can occur within all members of the group. Dunbar et al. (2012) argued that laughter, an effective way of triggering endorphin activation, might have allowed human social groups to grow in size because it can be triggered

in several individuals simultaneously.

The current research in this domain supports the contention of laughter being a factor in human group formation. Dezecache and Dunbar (2012) observed 450 natural social groups in bars in the United Kingdom, France, and Germany, recording the frequency of laughter and the size of the corresponding social group. They defined social group size as the total number of individuals present in an interacting group, conversational subgroup size as the number of individuals within the social group taking part in a particular conversation, and laughter subgroup size as the number of individuals laughing in an obviously coordinated way. Individuals were said to be laughing when they were producing the vocalization that is characteristic of laughter (i.e., a series of rapid exhalation–inhalation cycles, Davila- Ross et al., 2009; Provine, 2001). Results showed that approximately 91% of all conversational subgroups contained four or fewer individuals, and 84% of all laughter subgroups contained two or three individuals. Since laughter triggers endorphin activation in the parties involved, this implies that in most occurrences of laughter, 2 to 3 members of the group are involved in an act that promotes social bonding.

Impact of Laughter on the Body

In recent decades, the idea that laughter is therapeutic was popularized by Norman Cousins in his 1976 article "Anatomy of an Illness (As Perceived by the Patient)," published in the New England Journal of Medicine (Provine, 2001). At the time, the mind-body connection had been established, as had the destructive role of stress (Selye, 1956; Cannon, 1932), so the idea that laughter could be healing did not seem farfetched. Cousins's timing to explore laughter was ideal, and his ideas

sparked interest in behavioral medicine, psychophysiology, psychoneuroimmunology and social psychology (Provine, 2001).

One such pioneering laughter researcher was Fry (1977) who used himself as a subject, using heart rate as a measure of exertion. Fry found that it took 10 minutes of rowing on his home exercise machine to reach the heart rate produced by one minute of hearty laughter (Provine, 2001).

Levi (1965) of the Karolinska Institute in Stockholm published the first biological movie review of a comedy. He recruited 20 female office clerks who watched several films. Before, during, and after watching comedy and drama, he measured the intensity of the subjects' emotional arousal in terms of epinephrine and norepinephrine, hormones that increase heart rate, blood pressure, and metabolic activity. Epinephrine and norepinephrine are members of the catecholamine family of hormones and neurotransmitters of the sympathetic nervous system, the body's "fight or flight" system. When the catecholamines start flowing, the body is "stressed" and getting ready for emergency action. The results were surprising in that both comedy and intense drama produced physiological arousal.

When it comes to how laughter might affect others, research indicates that voice quality can alter the mood of both speaker and listener (Siegman and Snow, 1997). Although this research focused on the more studied negative emotions of anger, fear, and anxiety rather than laughter, it demonstrates that voice quality can have psychological and physiological effects. For example, in one study, they found that talking in a loud, rapid voice like an angry person increases blood pressure, heart rate, and feelings of anger in the speaker, especially when matters of an emotional

nature are being discussed. The inner experience of anger, without vocalization did not drive cardiovascular reactivity. The impact of vocalization in physical reactivity, indicates that the act of laughter, not the perception or production of humor, created most of the physiological change (Provine, 2001).

Unfortunately, researchers have not yet focused much on laughter, or positive emotions in general. Laughter therefore needs to be examined in an empirical context to determine how it affects one's own and others' physiology. As Provine (2001), pointed out "The stakes are higher than they seem, as inappropriate laughter and crying are among the most common and least understood symptoms of neuropathology and psychopathology" (p. 154).

Given that the physiological correlates of laughter are still ambiguous, an even more challenging question is the impact of laughter on one's health. Although there is an absence of data on laughter and health, the scattered research on variables of sense of humor, positive life events, cheerfulness, and optimism, suggests that such positive states have a beneficial impact on the immune system. It has been suggested that positive affect might moderate the effects of stress and increase immune-system function. However, this account is complicated because the presumed stress-reducing properties of humor are not well established, and further research is required before we can attempt to answer these questions (Provine, 2001).

As Provine (2001) put it, "There is little scientific support for the popular idea that people with the personality traits of humor, cheerfulness, or optimism are particularly healthy or long-lived, but the possibility remains that situational laughter and humor are effective coping mechanisms for transient stress. The health-sustaining

factor may not be laughter itself but how laughter and humor are used to confront life's challenges."(p. 199)

Psychotherapy and Laughter

Mahrer and Gervaize (1984) conducted a review of the literature on laughter in psychotherapy. In their review of they explored two questions: (a) Is strong, hearty laughter regarded as a welcomed and desirable event by various therapeutic approaches? (b) In those therapeutic approaches, how do therapists help to bring about the occurrence of strong laughter?

In answering the first question, researchers found that a broad array of therapeutic approaches consider the occurrence of strong, hearty, high-energy patient laughter as a desirable event in psychotherapy, and should be welcomed. For example, in a wide array of approaches including psychoanalytic therapy, Gestalt therapy, provocative therapy, Adlerian therapy, interpersonal therapy, and personal construct therapy, theorists believed that strong, sincere laughter can at times signal a desirable shift in the patient's self-concept towards more acceptance of oneself (e.g., Greenwald, 1975; Kris, 1940; Mindess, 1976; O'Connell, 1981; Poland, 1971; Shaw, 1960; Sullivan, 1957; Viney, 1983). Mahrer and Gervaize (1984) thus suggested four ways that strong client laughter is associated with therapeutic progress: (a) Strong laughter may indicate a desirable shift in self-concept; (b) strong laughter may be an expression of a valued or optimal state characterized by energy, openness, and awareness; (c) strong laughter may be an expression of a positive counseling relationship, in that it leads to warmth, acceptance, intimacy, and a reduction in emotional distance; and (d) strong laughter can be seen as an index of client change,

in that it reflects heightened experiencing, strong-feeling expression, emotional
flooding, or catharsis.

On the basis of the assumption that client laughter is a positive therapeutic
event, Gervaize, Mahrer, and Markow (1984) sought to determine which counselor
interventions led to client laughter. They developed a measure with eight therapist
risk risk interventions that their review suggested should lead to strong client
laughter: directed interpersonal risk behavior, defined risk behavior by patient or
other, ridiculous explanation/description of patient, instruction to carry out affect-
laden behavior with heightened intensity, carrying out risk behavior as/for the patient,
risked being of other person or entity, excited pleasure over risked behavior, and
directed risk behavior toward the therapist.

Gervaize et al. (1984) found that 73% of counselor statements preceding
strong client laughter were risk interventions, whereas only 10% of counselor
statements preceding mild or moderate laughter and only 3% of counselor statements
preceding non-laughter were risk interventions.

On the basis of their findings, Gervaize et al. (1984) proposed that the
following conditions resulted in strong laughter: (a) The client is close to behaving in
a way that is risky but is blocked from expressing himself or herself in that way; (b)
the therapist welcomes and enjoys the behavior; and (c) the therapist encourages the
client to act out the risky behavior through heightened feeling, through defining the
nature of the risky behavior, through exaggeration, through welcoming its occurrence,
and through directing its occurrence in the therapeutic interaction.

Gervaize et al.(1984) went on to suggest that it is the counselor's having a "humorous outlook on life, a spontaneous playfulness, an appreciation of the ridiculous and the tragic-comic, an ability to stand off and see oneself as silly and foolish, a recognition of the absurd, a welcoming of the burlesqued and the caricatured" (p. 512). They emphasized that strong laughter is typically not brought about in therapy by funny jokes, one-liners, slapstick, or comedy routines.

They concluded their review by inviting clinical researcher to consider the following avenues of investigation:

1. Is hearty strong laughter preceded by these eight methods? Are some of these more prevalent than others? Are there other methods beyond these eight?

2. Are there potent patterns, combinations, or sequences of therapist statements that precede such hearty laughter? What are the facilitating contexts effects which are helpful?

3. Once we have a fairly good idea of what kinds of therapist methods actually seem to be followed by such hearty strong laughter, there is a reasonable basis for speculating about why this laughter occurs, and why certain methods or patterning of methods seem to be followed by such laughter.

4. Are there defining characteristics of strong laughter as a therapeutically welcomed event as contrasted with strong laughter as a less welcomed therapeutic event?

5. Is hearty strong laughter accompanied with or followed by indications of a) a positive shift in the patient's self-concept or self-perspective, or b) the development of a patient-therapist relationship marked by warmth and

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acceptance, intimacy, and a reduction in emotional distance?

6. What are the concomitants of such strong laughter? What are patients doing and how are they acting when they are in this state? Proponents of some theoretical approaches hold that when patients are laughing heartily they are momentarily expressing a significant therapeutic change. It is as if the hearty laughing is a window into a welcomed and desirable therapeutic state. Accordingly, it would be valuable to examine what patients are doing and how they are acting in the concomitant vicinity of the hearty laughter, especially in contrast to prior ways of being and behaving.

7. What are the relationships between the therapeutic value of such strong hearty laughter and whatever therapy and patient variables are deemed meaningful by the given therapeutic approach: e.g., timing in the session(s), phase of therapy, personality characteristics of the patient, psychodiagnosis, content of the relevant immediate material?

Falk and Hill (1992) pointed out that, although findings from the Gervaize et al. (1984) were interesting and provocative, they need to be replicated, specially since there were several methodological problems with the their study. First, they did not provide an operational definition of what they considered to be strong laughter, and there also seemed to exist an absence of measures of laughter in the literature. Hence, Falk and Hill (1992) suggested that laughter needs to be operationally defined. Their second concern was that, in the Gervaize et al. study (1984), 27% of the counselor statements preceding strong laughter and 90% of the counselor statements preceding mild and moderate laughter were categorized as non risk interventions, suggesting

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that not all client laughter was always preceded by risk interventions. Thus, Falk and Hill (1992) wished to investigate other counselor interventions that precede client laughter. They state that an obvious intervention that one might consider relevant is counselor humor.

Falk and Hill (1992) therefore extended Gervaize et al.'s (1984) study by coding different types of counselor humor. On the basis of the Killinger (1976) and Salameh (1983) systems, they came up with the following categories of counselor humor: (a) Revelation of truth: Therapist uses humor to challenge some assumption the client has about himself or herself, others, or nature. (b) Exaggeration/simplification: Therapist exaggerates the client's situation with an overstatement or understatement of fact, thoughts, or feelings; (c) Surprise: Therapists brings up something that is unexpected or different from what the client was expecting; (d) Disparagement: Therapist ridicules client or other person, putting them down by condescension or mocking or criticizing appearance, behavior, speech patterns, etc. Therapist uses humor at the client's expense; (e) Release of tension: Therapist discusses thoughts or feeling about tension-filled or tabooed subjects such as sex, anxiety, or the therapeutic relationship in a humorous manner; (f) Incongruity: Therapist yields a comic effect by juxtaposing two or more ideas, feelings, situations, objects, or frames of reference that are not typically considered together; (g) Word play: Therapist uses words in a way that is foolish, nonsensical, inane, vernacular, or irrationally ordered. Includes puns, alliteration, double-entendre, rhyming, and slapstick; (h) Nonverbal humor: Therapist uses facial expression, posture, or other nonverbal cues to impose a comic edge to intervention;(i) Anecdote: Therapist relates

a funny story, parable, or anecdote that highlights the universality of human experience and aids client understanding; (j) Other humor: Therapist statements that contain humor but do not fit in any of the other categories; (k) Nonhumorous interventions: Therapist interventions that are not humorous.

Falk and Hill (1992) found that in eight cases of brief psychotherapy most of the client laughter was mild and moderate, with only eight instances of strong laughter. Also six categories of counselor humor and four categories of risk interventions preceded client laughter in 236 events from eight cases of brief psychotherapy. For humor, the categories of other humor and release of tension led to the most client laughter. For risk interventions, ridiculous description of client led to the most client laughter. In general, humorous interventions led to more client laughter than did interventions that encouraged clients to take risks.

More recently, Marci, Moran, and Orr (2004) explored the interpersonal role of laughter during psychotherapy, using physiological evidence. Participants in the study were 10 distinctive patient therapist dyads that were part of ongoing research on the relationship between psychophysiology and empathy conducted within the Massachusetts General Hospital Psychotherapy Research Program. Patient and therapist participants were recruited from the Massachusetts General Hospital Department of Psychiatry Outpatient Department. In each case, patients had seen their present therapist for more than four sessions. In addition, all patient participants were clinically stable and without hospitalization during the year leading up to the study and had seen their respective therapists for an average of 72.4 sessions (SD =

70.4), suggesting that most of the patients were well established in their psychotherapy. All participants were kept blind to the goals of the study.

In their study, Marci et al. (2004) examined 10 unique sessions of psychodynamic psychotherapy with digital videotape and assessed measures of skin conductivity (SC) from 10 different clients and therapists. They defined a laugh response as any highly stereotyped utterance characterized by multiple forced, acoustically symmetric, similar vowel-like notes separated by a breathy expiration in a decrescendo pattern (Provine, 1993). Of the 119 patient laughs, 91 (76.5%) were when the client was speaking as compared with 28 (23.4%) were when the therapist was speaking. In contrast, of the 48 instances of therapist laughter, only five (10.4%) were when the therapist was speaking, whereas 43 (90.3%) occurred when the client was the speaker. They reported this difference to be highly significant ($p < .001$).

In addition, the physiological data showed that during laughter episodes, the mean SC level significantly increased, regardless of whether the patient or therapist was speaking. SC change scores were significantly larger when patients and therapists laughed together compared with when either was laughing alone ($p < .05$), perhaps due to the contagion of the shared laughter experience. Marci et al. (2004) suggested that these results support the role of laughter in stimulating the autonomic nervous system. In other words this finding supports the view that laughter during conversation is highly coordinated and that shared laughter is a co-constructed activity in and of itself (Jefferson et al., 1987). This co-construction of meaning may play a role in developing or supporting the therapeutic bond or alliance that has been shown to correlate with therapeutic outcome in psychotherapy (Martin et al., 2000).

Chapter 3: Statement of the Problem

Valuing of laughter is found in a broad array of approaches including

psychoanalytic therapy, direct decision therapy, Gestalt therapy, provocative therapy,

Adlerian therapy, interpersonal therapy, and personal construct therapy (e.g.,

Greenwald, 1975; Kris, 1940; Mindess, 1976; O'Connell, 1981; Poland, 1971; Shaw,

1960; Sullivan, 1957; Viney, 1983). Indeed, laughter has been viewed as a shift

towards more acceptance of oneself (Farrelly & Brandsma, 1974; Mahrer & Gervaize

1984; Mindess, 1971, 1976; Perls, 1970), a positive shift in personal cognitions and

constructs (Viney, 1983), or a shift toward seeing oneself along the lines of the

therapist's interpretations (Berne, 1972; Grotjahn, 1966, 1970; Mindess, 1971;

Poland, 1971; Rose, 1976). On the other hand, laughter has been viewed as an

indication of serious disturbance (Levine, 1976; Noyes & Kolb, 1963), an expression

of dangerous unconscious processes (Bergler, 1956; Freud, 1960; Grotjahn, 1970;

Harman, 1981; Koestler, 1964; Plessner, 1970), or a defense against internal or

external threat (Ansell et al., 1981; Kubie, 1971; Zuk, 1966).

Unfortunately, there is not much research on laughter in psychotherapy.

Provine (2000) argued that a necessary foundation to studying the behavior of

laughter is to first observe when and how it occurs. Since we did not find sufficient

empirical data on laughter in psychotherapy to suggest hypotheses, we determine that

we would use research questions instead. The first research question, therefore was to

determine the frequency of laughter in therapy.

Research Question 1:
1a: What proportion of psychotherapy sessions include at least one instance of

client laughter?

1b: Does the amount of laughter (i.e. the amount of time client spend laughing in in a session) vary across the course of therapy?

Second, several dimensions or characteristics have been identified in the literature. In their acoustic analysis, Hudenko, Stone, and Bachorowski (2009) found that children with autism exhibited only laughter arising from a positive internal state, whereas children without autism exhibited both laughter arising from a positive internal state and laughter arising from social interactions. Similarly, Gervais and Wilson (2005) identified voluntary versus involuntary laughter, and Lavan et al. (2012) distinguished between mirthful and social laughter. More specifically in psychotherapy research, Imai and Iwakebe (2014) identified types of laughter in a sample of 146 laughter episodes taken from three different clients working with the same psychotherapist. The types of laughter were classified as: (1) laughter of joy, (2) laughter of disagreement, (3) contemptuous laughter, and (4) laughter associated with self-disclosure.

Although there is some overlap among the categories put forward by researchers (Hudenko et al, 2009, Gervais & Wilson, 2005; Imai & Iwakebe, 2014; Lavan et al., 2012), further research is needed to integrate these findings. We are particularly concerned that laughter events might not fall nicely into mutually-exclusive categories, but rather that laughter events might be better described as involving different amounts of various characteristics. We (my advisor and I) have chosen characteristics based on the literature and

a preliminary review of several cases: cheerful/happy, polite, reflective, contemptuous, and nervous. These characteristics were further defined by working with a research team and the measures used to code them are mentioned below. Once the research team could reliably code the various characteristics in training sessions, they then rated the presence of each characteristic for each laughter event in the cases identified for this study.

Research Question 2:

2a: What is the average intensity across laughter events for each characteristic?

2b: Does the average intensity of each characteristic of laugher change over the course of therapy?

Third, Nelson (2012) conceptualized laughter as an attachment behavior. According to her, "Laughter represents connection or detachment in the therapeutic relationship. It can invite closeness, or it can be a barrier to it. Some mutual laughter represents delight in the recognition of transformation, whereas other laughter may serve as a resistance to growth and change" (p. 114). If laughter is an attachment behavior, it stands to reason that levels of intensity of the afore-mentioned characteristics of laughter events will vary based on client attachment style.

Research Question 3:

What is the relationship between the different characteristics of laughter events and client attachment styles?

Chapter 4: Method

Data Set

Data were collected at the Maryland Psychotherapy Clinic and Research Lab (MPCRL), which provides open-ended low-cost individual psychodynamic/interpersonal psychotherapy to adult community clients who consent to be videotaped and participate in research. Doctoral student therapists, who had completed at least two practica prior to starting at the clinic and who were supervised by experienced supervisors, provided therapy.

At the time of the study data were available for 87 cases (ranging from intake only to 96 sessions) To have comparable data from all clients, to have data from across the span of psychotherapy, and to include only cases that had an opportunity to establish an attachment with their therapist, we examined 33 cases that had completed at least 20 sessions of psychotherapy. Research suggests that clients are typically able to establish some form of attachment by the 8th session (Mallinckrodt, Porter, & Kivlighan, 2005) and we determined that 20 sessions might allow us to examine if there were changes in laughter across time. In these identified cases we coded sessions 1 to 5 and sessions 16 to 20 to examine laughter.

Participants

Therapists. Sixteen (11 female, 5 male; 8 European Americans, 2 Asian American, 2 Asian international, 3 Latino/a American, and 1 African-American) doctoral students ranging in age from 26 to 50 years ($M = 30.78$, $SD = 8.43$) and in their 2nd to 5th year of a counseling psychology doctoral program served as therapists for the cases examined in this study. Of the 16 therapists, 9 had 2 clients each, 4 had 3 clients each, and 3 therapists had 1

client each. Therapists had all worked in the clinic for 1 to 3 years. All had completed at least two psychotherapy practica before working in the clinic. Therapists participated in weekly individual supervision and in bi-weekly group supervision.

Clients. There were 33 clients (18, female, 15 male; 26 White American, 4 African American, 2 Latino/a American, 1 multiethnic, age $M = 36.98$, $SD = 12.69$) in the present study. Formal diagnoses were not determined, but presenting problems described during screening (some described more than one) included relationship concerns (21), anxiety or depression (15), career concerns (2), coming out (1), issues related to meaning of life (1) and immigration issues (1). Potential participants were excluded if they were under 18 years of age, experiencing alcohol or drug abuse, psychosis, or suicidal threats, or if they were currently in individual therapy elsewhere. Those taking psychotropic medications had to have been stable on their medications for at least 2 months.

Judges. Seven (6 female, 1 male; 3 White American, 2 African American, 2 Asian American; age $M = 24.51$, $SD = .93$; 1 graduate and 6 undergraduate students including the primary investigator) people served as judges. All judges (except the primary investigator) were currently research assistants in the Clinic; they had a minimum grade point average of 3.5 on a 4-point scale and exhibited an interest in psychotherapy, professionalism, and motivation during an interview with the primary investigator.

Measures

The Experiences in Close Relationships Scale (ECR; Brennan, Clark, & Shaver, 1998) assesses attachment style. The ECR is a 36-item self-report questionnaire with subscales of Anxiety and Avoidance, each of which has 18 items rated on a 7-point Likert scale from 1 (*disagree strongly*) to 7 (*agree strongly*). The Anxiety subscale measures the client's desire for closeness, as well as fear of rejection, neglect, and abandonment (e.g., "I often want to merge completely with others, and this sometimes scares them away."). The Avoidance subscale measures the client's aversion to interdependence and emotional closeness in significant relationships (e.g., "I prefer not to show others how I feel deep down."). Several studies have supported the validity of this measure. Internal consistency (alpha) ranged between .91 and .94 for Avoidance, and .90 and .91 for Anxiety (Brennan et al., 1998; Marmarosh, Gelso, Markin, & Majors, 2009; Mohr, Gelso, & Hill, 2005); for the current study, it was .928 for the Avoidance subscale and .914 for the Anxiety subscale.

The Therapist Orientation Profile Scale—Revised (TOPS; Worthington & Dillon, 2003) assesses therapists' orientation or approach to psychotherapy. The TOPS is an 18 item measure, with three items each rated on a 10-point scale from *not at all* (1) to *completely* (10) on six scales, each representing a different orientation (Psychodynamic/ Psychoanalytic, Humanistic/Existential, Cognitive/Behavioral, Family Systems, Feminist, Multicultural.) For each of the subscales, therapists are asked about their identification with the orientation, whether they conceptualize clients from that perspective, and

whether they utilize the methods of that orientation. Worthington and Dillon (2003) reported high internal consistency estimates of .96, .95, .95, .95, .95 and .94 for each of the 6 subscales respectively.

Criteria for identifying laughter events. For the purpose of the present study, laughter events were included if they had at least three laugh notes (e.g., ha, ha, ha, ha ha) and lasted at least 3 seconds. These criteria were based on Provine (2001), who conducted an acoustic analysis of laughter and defined laughter as a series of laugh-notes (e.g., "ha," "ho," "he") that last about 1/ 15 second and repeat every 1/ 5 second.

Characteristics of Laughter. We created tentative categories of laughter from Imai and Iwakebe's (2014), Scott's (2013) and Hudenko et al.'s (2009) category systems. We also watched several laughter episodes from different cases to fine-tune the categories. Each characteristic was rated on a 5-point scale (1 = no presence; 5 = strong presence) so that we had a profile of the characteristics for each laughter event. In defining these characteristics, we focused on the observable verbal and nonverbal features of the laughter event (e.g., number of "ha" sounds and length) rather than the function the laughter seemed to serve (e.g., establishing the therapeutic relationship).

The final category system included 6 characteristics: (a) cheerful/happy, (b) polite (used as a social lubricant), (c) reflective (accompanies an adaptive shift in perspective), (d) contemptuous (associated with derision of self or attacking other), and (e) nervous (used to avoid feeling an unpleasant emotion). We describe each characteristic below and provide an

example from the data.

Cheerfulness. Cheerfulness was rated highly when both the client and therapist were aware of the context of the laughter situation and were mutually enjoying a moment together. The nonverbal cues are the presence of a smile, loud voice, gazing up (not looking down), and a relaxed and open body posture. Other observable cues that we used to identify cheerfulness were based on criteria developed by Ekman & Friesen (1982) who suggested that a smile or laugh of enjoyment could be distinguished from deliberately produced smiles or laughs by considering two facial muscles: zygomaticus major, which pulls the lip comers up obliquely, and orbicularis oculi, which orbits the eye, pulling the skin from the cheeks and forehead toward the eyeball. In identifying cheerful laughter, we therefore looked for crows-feet wrinkles at sides of the client's eyes, which research has shown to be correlated with genuine positive affect. Another criterion we used to rated cheerfulness highly was observing the timing of the event in psychotherapy, given that Ekman et al. (1988) found more smiling and laughter associated with positive affect when clients truthfully described pleasant feelings than when they claimed to be feeling positive emotions but were actually experiencing strong negative emotions.

An example is of a 27 year old Asian female therapist and a 32 year old Black female client. This laughter event took at 15 minutes into session 18. The client talked about how her mother often "guilt tripped" her because she did not do enough for the family. The client squinted her eyes and seemed

annoyed while describing her interactions with her mother. The client then paused for a second, let out a slight sigh, and commented on how her family policed her. The therapist listened attentively while the client was speaking, and leaned forward in her chair. After the client finished speaking the therapist sat up, seemed eager to speak and chuckled slightly while pointing out that the client's statement was ironic given that the client's mother was actually a police officer. The client threw her head back and shook with laughter for about 6 seconds and then seemed to feel more relaxed and understood. The therapist was laughing too, as if they were sharing a joke. This laughter event seemed to momentarily lighten the mood. After the laughter event, the client continued productive exploration about her family. Ratings: Cheerful: 5, Polite: 1, Reflective: 2, Contemptuousness: 1, Nervousness: 1

Politeness. Politeness was characterized verbally by "small talk" or the exchange of pleasantries. The duration of the laugh was usually brief, did not involve much energy, and did not produce wrinkling of the skin around the eyes. Many of the laughter events rated high in politeness occurred at the beginning of sessions.

As example of a laughter event that was rated high on politeness involved a 36 year old Latina therapist and a 54 year old Black female client. At the beginning of session 3, the client and therapist looked at each other briefly in silence. When the therapist asked how she had been over the last week, the client shifted in her seat, said she had been okay, but then looked

away and seemed to relax and laughed for 3 seconds. The therapist

reciprocated with a smile and laughed for 2 seconds. The client then went on

to discuss a new diet she had been following and its impact on her well-being

while the therapist listened attentively. Ratings: Cheerful: 2, Polite: 4,

Reflective: 1, Contemptuousness: 1, Nervousness: 2.

Reflectiveness. Laughter events were rated highly on reflectiveness if

there were verbal cues suggesting that the client was pondering, thinking about,

or exploring. There might have been a philosophic tone, or there might have

been some new understanding or insight that provided a larger perspective. The

nonverbal cues were a pensive tone of voice, open posture, congruence between

the words and mood, a relatively steady gaze and good eye contact, forward

leaning body language, and relaxed body posture.

An example involved a 29 year old White female therapist and a 67

year old White female client. This laughter event took place 20 minutes into

session 16. Prior to the laughter event, the client was sitting in a hunched

posture with a furrowed brow and talking to the therapist about how she was

coping with the recent death of her husband. The client threw her head back and

smiled. She then straightened her posture and told a story about the process of

sorting through her late husband's things. She furrowed her brow while smiling

and went on to narrate an incident in which she was listening to her TV show

really loud, and absentmindedly started to lower the volume. The client then

laughed for 4 seconds, shaking her head from side to side while she reminisced

about her husband always telling her to lower the volume of the television. The

therapist did not reciprocate the laughter, but maintained eye contact and leaned forward as she noted that even though the client got rid of her husband's things there would always be reminders of him. Ratings: Cheerful: 1, Polite: 1, Reflective: 5, Contemptuousness: 1, Nervousness: 2

Contemptuousnes**s**. The verbal cues for contemptuousness were words expressing hostility or disapproval directed either towards self or others. Nonverbal cues were sighing, scoffing, breathing out briefly, the client appearing to withdraw after the laughter event, and the client's eyes widening. Some clients wrinkled their forehead, flared their nostrils, or got red in the face.

An example of laughter that was rated highly on contemptuousness involved a 28 year old Asian male therapist and a 36 year old white male client. About 18 minutes into session 3, the client squinted his eyes, pursed his lips, and seemed visibly angry while talking about his divorce. He shook his head from side to side and described his frustration and anger that his wife was going to keep his last name even after the divorce. The client laughed and scoffed for 4 to 5 seconds while discussing the ideal situation in which his daughter would have his last name and his wife would revert back to her maiden name. The client seemed to fidget and stiffened his body while laughing. The therapist tilted his head, seemed to be listening closely and reflected the anger but did not reciprocate the laughter. After the laughter event, the client and therapist continued to talk about how the client dealt with anger.

Nervousness. The verbal cue for nervousness as a characteristic of laughter was incongruence between the content of the discussion and the

client's reaction (e.g., the client laughing while talking about a frightening situation). The non-verbal cues were the client turning his or her eyes away from the therapist and appearing uncomfortable. At times the pitch of the client's laughter was higher, and their voice trembled before or after the laughter event. Often there was tension observed in the form or clenched hands and arms, fidgeting, and generally drawing in of limbs.

An example was of a 27 year old Asian female therapist and a 32 year old Black female client. Prior to the laughter event that occurred about 9 minutes into session 5, the client was talking about feeling a sense of panic at a recent wedding when the father-daughter dance was announced. While narrating this incident the client shrugged and played with her shirt sleeve as she explained that since she was estranged from her father, this was a painful reminder that she would never have an opportunity to have him walk her down the aisle when she got married. The client leaned forward and spoke of trying to share this sadness with her mother. The client then let out a short burst of air, rolled her eyes, and exclaimed that the mother said she could walk the client down the aisle since her father was not in the picture. The client laughed in a high pitch for 5 seconds, her face flushed, and she said that was not what she was talking about. The client seemed to be trying to convey to her therapist that her mother missed her point and misunderstood her sadness. The therapist looked at the client with an expression of sadness and nodded, but did not reciprocate her laughter. After the laughter event, the therapist and client continued to discuss the client's relationship with her father, with the client

saying that ideally she wanted her grandfather to walk her down the aisle since he is the closest thing she had to a father figure. Ratings: Cheerful: 1, Polite: 1, Reflective: 2, Contemptuousness: 2, Nervousness: 4

Defensiveness and distraction. Initially, we had also included two additional laughter characteristics, which were defensiveness and distraction. While creating these categories, we (my advisor and I), had thought of defensive laughter as self-deprecating laughter, and distraction as an obvious attempt to distract the therapist by telling jokes or humorous instances that did not relate to the therapeutic work. However, in the process of training we were unable to distinguish between defensive and nervous laughter, and we found no instances of distraction laughter. We therefore dropped these characteristics and only coded the 5 characteristics of cheerfulness, politeness, reflectiveness, nervousness and contemptuousness.

Procedures

Client recruiting and screening. Clients were recruited through internet announcements, local therapist and physician referrals, newspaper ads, and word of mouth. A phone screening interview was used to determine eligibility (over 18, experiencing interpersonal problems, and taking psychotropic drugs for at least two months if using it, not suicidal, not showing psychotic symptoms, no active substance abuse, no concurrent involvement in other individual therapy). Eligible potential clients completed the ECR, and then participated in an intake where the therapist assessed willingness to work with the therapist, be videotaped, explore relational components to problems, and

pay a fee on a sliding scale from $25 to $50. Clients also completed additional

scales before and after intake and after every session. Those who were

ineligible, as well as clients who chose not to participate, were provided

referrals to other providers if appropriate.

Treatment. Therapists worked with clients using a psychodynamic and

interpersonal perspective, incorporating other perspectives when clinically

appropriate. Sessions typically lasted about 50 minutes, were held weekly, and

were video-recorded. There was no limit to the total number of sessions for

each client, other than if therapists left the Clinic.

Phase 1 coding. Research assistants were trained to identify a variety

of events (e.g., crying, laughter, silence, immediacy), and provide a description

and duration for each event. One trained, research assistants coded all the events

in each session by watching the DVDs.

Training judges for Phase 2 Coding. The judges met as a group for

two 3-hour training workshops to discuss the definitions and criteria for the

above-mentioned characteristics of laughter, how to rate intensity of the

characteristics, and how to record the duration of the event. Then, as a group,

they practiced coding consensually using DVDs of therapy sessions not

included in the sample for this study. Training then lasted until judges had a

clear idea how to code and reached an inter-rater reliability of .70 or greater on

each category system.

Phase 2 Coding of laughter episodes in cases. On completion of

training, judges met in groups of 3 to 4 to code the presence of each

characteristic on a scale on a 5-point scale ranging from no presence of laughter characteristic to strong presence of laughter characteristic. (See Appendix A) Each team of judges was assigned to watch all of the sessions from between session 1 to 5 and 16 to 20 that had been identified in Phase 1 coding as including at least one instance of laughter.

After watching a laughter event, coders first completed their ratings independently. Final ratings were reached by consensus after considerable discussion. Independent ratings were used to assess reliability but consensus ratings were used for data analyses. If the inter-rater reliability was low for a particular client session, judges recoded the events in that session a second time after discussing our rationale for the ratings. This process was repeated till an inter-rater reliability of $> .70$ was reached for all the event ratings for one session.

Data Analysis

In this study, 814 laughter events were nested within 330 sessions, which were nested within 33 cases, which were nested within 16 therapists at one clinic. We therefore analyzed the data using hierarchical linear modeling (HLM; Bryk & Raudenbush, 2011), a statistical program capable of analyzing events nested within multiple levels. In contrast to linear regression models, HLM can account for multilevel non-independent data. Since the average number of events per session was 1.74 ($SD = 0.87$) there was a limited range of events per session, hence we collapsed all events in a given session. We thus

analyzed sessions (within clients) at Level 1, clients (within therapists) at Level

2, and therapists (between therapists) at Level 3.

We conducted our data analyses in two steps. First we created an unconditional

or empty model for each laughter characteristic (sessions nested within clients, and

clients nested within therapist) to partition the variance in a laughter characteristic

into between-session, between-clients and between-therapist components. These

models were "empty" because there were no Level 1, Level 2, or Level 3 predictors.

An example of the null model with no predictors is:

Level-1 Model

$CHEERFUL_{ijk} = \pi_{0jk} + e_{ijk}$

Level-2 Model
$\pi_{0jk} = \beta_{00k} + r_{0jk}$

Level-3 Model
$\beta_{00k} = \gamma_{000} + u_{00k}$

Mixed Model
$CHEERFUL_{ijk} = \gamma_{000} + r_{0jk} + u_{00k} + e_{ijk}$

In the second step of our analysis we used growth modeling to assess how the

laughter characteristic changed across therapy, and we also added the predictors of

client-rated avoidant attachment and anxious attachment at level 2 (between clients).

An example of the full model involving ECR (where client-rated avoidance

and anxiety attachment are level 2 predictors of cheerfulness in laughter ratings, is:

Level-1 Model

$CHEERFUL_{ijk} = \pi_{0jk} + \pi_{1jk}*(LINEAR_{ijk}) + \pi_{2jk}*(QUAD_{ijk}) + e_{ijk}$

Level-2 Model

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$\pi 0jk = \beta 00k + \beta 01k*(AVOIDjk) + \beta 02k*(ANXIOUSjk) + r0jk$

$\pi 1jk = \beta 10k + \beta 11k*(AVOIDjk) + \beta 12k*(ANXIOUSjk) + r1jk$

$\pi 2jk = \beta 20k + \beta 21k*(AVOIDjk) + \beta 22k*(ANXIOUSjk) + r2jk$

Level-3 Model

$\beta 00k = \gamma 000 + u00k$

$\beta 01k = \gamma 010 + u01k$

$\beta 02k = \gamma 020 + u02k$

$\beta 10k = \gamma 100 + u10k$

$\beta 11k = \gamma 110 + u11k$

$\beta 12k = \gamma 120 + u12k$

$\beta 20k = \gamma 200 + u20k$

$\beta 21k = \gamma 210 + u21k$

$\beta 22k = \gamma 220 + u22k$

Mixed Model

CHEERFULijk = $\gamma 000 + \gamma 010*AVOIDjk + \gamma 020*ANXIOUSjk + \gamma 100*LINEARijk$
$+ \gamma 110*LINEARijk*AVOIDjk + \gamma 120*LINEARijk*ANXIOUSjk + \gamma 200*QUADijk$
$+ \gamma 210*QUADijk*AVOIDjk + \gamma 220*QUADijk*ANXIOUSjk$
$+ r0jk + r1jk *LINEARijk+ r2jk *QUADijk+ u00k + u01k *AVOIDjk + u02k *ANXIOUSjk +$
 $u10k *LINEARijk + u11k LINEARijk*AVOIDjk + u12k *LINEARijk*ANXIOUSjk$
$+ u20k *QUADijk + u21k *QUADijk*AVOIDjk + u22k *QUADijk*ANXIOUSjk + eijk$

Chapter 5: Results

Inter-rater reliability Evaluation

Inter-rater reliability was assessed using interclass correlation coefficient or ICC, (McGraw & Wong, 1996) to assess the degree that judges provided consistency in their ratings of to each characteristic in a laughter event. The average inter-rater agreement, calculated as the mean ICC coefficient, was 0.78 across all 5 characteristics. However, the ICC varied between the different characteristics of laughter ranging from 0.69 for reflectiveness to 0.87 for cheerfulness, indicating that judges had a good degree of agreement and suggesting that laughter characteristics were rated similarly across judges. Table 1 shows the ICC and 95% level for each characteristic. Hence, adequate inter-rater reliability was found both for all the characteristics.

Table 1 Inter-rater reliability ratings (ICC) and the 95% confidence interval for the 5 characteristics of laughter

Laughter Characteristic	I.C.C.	95% C.I. level
Cheerfulness	0.87	0.83 to 0.091
Politeness	0.72	0.63 to 0.81
Reflectiveness	0.69	0.54 to 0.84
Contemptuousness	0.83	0.72 to 0.94
Nervousness	0.79	0.74 to 0.84

Descriptive Statistics

In calculating descriptive statistics for laughter, we only examined the sessions that included at least one laughter event. We first computed means for each case and then computed averages across cases. The average duration of laughter events (averaged across cases) was 3.50 ($SD = 0.68$) seconds. Means and standard deviations for, and correlations among characteristics, at the session-level are shown in Tables 2a. Table 2b and 2c show correlations between laughter characteristics early in therapy (i.e. sessions 1 to 5) and late in therapy (i.e. sessions 16 to 20), respectively. Because the correlations among characteristics were low ($r < .13$), we can conclude that the characteristics were not highly correlated and were independent.

Table 2a: Means, Standard Deviations, and Correlations Among Laughter

characteristics for all sessions

Variable	M	SD	1	2	3	4	5
Cheerfulness	3.16	.96	_				
Politeness	3.47	.71	0.11	_			
Reflectiveness	3.46	.67	0.12	0.08	_		
Nervousness	2.64	1.33	0.01	-0.01	-0.09	_	
Contemptuousness	1.87	1.01	-0.03	0.02	-0.05	0.08	_

Note. N= 330 sessions.

Table 2b showing correlations between laughter characteristics early in therapy (session 1-5)

Variable	M	SD	1	2	3	4	5
Cheerfulness	3.15	0.80	_				
Politeness	3.47	0.69	0.17*	_			
Reflectiveness	3.25	0.82	-0.02	0.07	_		
Nervousness	2.89	1.41	-0.03	-0.04	-0.09	_	
Contemptuousness	1.89	1.04	-0.03	-0.09	0.06	0.06	_

Note. N= 165 sessions

Table 2c showing correlations between laughter characteristics late in therapy (session 16-20)

Variable	M	SD	1	2	3	4	5
Cheerfulness	3.05	0.91	_				
Politeness	3.63	0.79	0.07	_			
Reflectiveness	3.46	0.53	-0.02	0.06	_		
Nervousness	2.48	0.88	-0.09	-0.01	-0.15*	_	
Contemptuousness	1.89	1.35	-0.01	0.02	0.09	0.04	_

Note. N= 165 sessions

Therapist Theoretical Orientation

Therapists' theoretical orientation, was assessed using the Therapist Orientation Profile Scale—Revised (TOPS, Worthington & Dillon, 2003). First scores were obtained for each of the 6 subscales (Psychoanalytic/Psychodynamic, Humanistic/Existential, Cognitive/Behavioral, Family Systems, Feminist, Multicultural) for each therapist. If a therapist took the measure more than once, over the course of their training, the subscales scores were averaged to obtain a single score for each of the 6 subscales. Next, we averaged the subscale scores across all the therapists to obtain a general overview of their approach to psychotherapy. The average score for the psychoanalytic/psychodynamic scale was 7.38 (SD 1.59) for Humanistic/Existential scale was 6.24 (SD 1.85), Cognitive/Behavioral scale was 4.26 (SD 2.36), Family Systems scale was 3.04 (SD 2.17), Feminist scale was 4.12 (SD 2.30) Multicultural scale was 6.18 (SD 2.09). Therefore, therapists in the current sample tended to be primariry psychodynamic/psychoanalytic, followed by

humanistic/existential and multicultural in their theoretical orientation as measured by the TOPS (Worthington & Dillon, 2003).

Research Question 1:

1a: What proportion of psychotherapy sessions include at least one instance of client laughter?

Across all client an average of 92% of sessions ($SD = .20$) included atleast one instance of laughter. In other words, across all clients at least one instance of laughter was seen in 9 out of 10 sessions.

1b: Does the overall frequency for the occurrence of laughter (i.e. clients either laughed or did not laugh in a session) vary across the course of therapy?

In the beginning of therapy (sessions 1 to 5), clients laughed at least once an average of .96 per session ($SD = .12$), whereas in sessions 16 to 20 for clients laughed at least once an average of 0.88 ($SD = .27$) per session.

Next using growth curve analysis we did not find a significant change in the duration of laughter over the course of time in therapy, $\beta = 0.01$, $SE = 0.01$, $df = 15$, $t = 0.03$, $p = 0.97$. Hence, overall amount of laughter did not vary across time when sessions 1 5o 15 and 16 to 20 were examined.

Research Question 2:

2a: What is the average intensity across laughter events for each characteristic?

The mean and standard deviation for each characteristic was shown in Table 2a. A bar graph of the means is shown in Figure1. Because these scores come from nested data, it was not possible to compare scores statistically.

However, we conducted an effect size analysis (difference between means divided by the pooled standard deviation) to determine differences among the five characteristics of laughter. Based on benchmarks suggested by Cohen (1988), effect sizes were considered small if $d = 0.20$ to 0.49, medium if $d = 0.50$ to 0.79, and large if $d = 0.80$ and greater.

Large effect sizes were found between the characteristics of reflectiveness and contemptuousness ($d = 1.85$), politeness and contemptuousness ($d = 1.83$), cheerfulness and contemptuousness ($d = 1.31$), politeness and nervousness ($d = 0.78$), and, between reflectiveness and nervousness ($d = 0.78$). A medium effect size was found between contemptuousness and nervousness ($d = 0.65$) and between cheerfulness and nervousness ($d = 0.60$). A small effect size was found between cheerfulness and politeness ($d = 0.37$) and between cheerfulness and reflectiveness ($d = 0.36$). No differences were found between politeness and reflectiveness ($d = .01$). Hence, laughter events were mostly characterized by politeness and

reflectiveness, moderately characterized by cheerfulness and nervousness, and only infrequently characterized by contemptuousness.
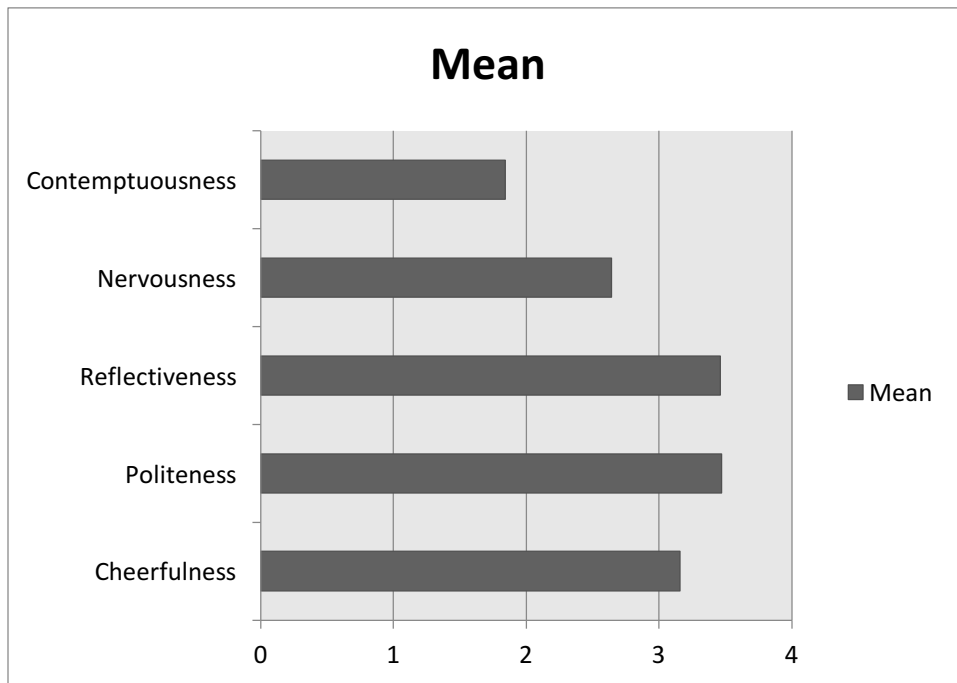

Figure 1: Mean for the characteristics of laughter

2b: Does the average intensity of each characteristic of laugher change over the course of therapy?

Average intensity did not change over time for cheerfulness, $\beta = 0.03$, $SE = 0.01$, $df = 15$, $t = 0.75$, $p = 0.46$, politeness, $\beta = 0.05$, $SE = 0.01$, $df = 15$ $t = 1.09$, $p = 0.29$, reflectiveness, $\beta = 0.04$, $SE = 0.01$, $df = 15$ $t = 0.82$, $p = 0.42$, nervousness, $\beta = -0.02$, $SE = 0.01$, $df = 15$ $t = -1.70$, $p = 0.11$, or contemptuousness, $\beta = 0.15$, $SE = 0.01$, $df = 15$, $t = 2.44$, $p = 0.20$. Hence, the characteristics of laughter did not change over time in therapy.

Research Question 3:

What is the relationship between the different characteristics of laughter events and pre-therapy client attachment styles?

To answer this question, for each of the laughter characteristics we will next discuss the HLM statistical analysis of the intensity ratings.

HLM Analyses

Cheerfulness**.** The partitioning of variance through the empty model found that 67% of the variance of cheerfulness was explained at Level 1, 15% was explained at Level 2, and 18% was explained at Level 3. Significance levels cannot be calculated for Level 1, but both Level 2 and Level 3 were both significant ($p < 0.001$). Hence, cheerfulness of laughter seemed to differ across sessions, clients, and therapists. In addition, we found a significant negative effect for attachment avoidance, $\gamma\,010 = -0.25$, $SE = 0.08$, $df = 15\ t = -3.32$, $p = 0.01$, but not for attachment anxiety, $\gamma 020 = 0.01$, $SE = 0.04$, $df = 15$, $t = -0.05$, $p = 0.93$. In other words, when the client's attachment avoidance was high, the client's laughter was rated as less cheerful.

Politeness. The partitioning of variance through the empty model found that 95% of the variance was explained at Level 1, 4% at Level 2, and 1% at Level 3. Significance levels cannot be calculated for Level 1, but Level 2 was significant, $p < 0.001$. Thus, most of the variance in politeness was due to sessions, with some due to clients, and almost none to therapists. We did not find a significant effect for attachment avoidance, $\gamma 010 = 0.03$, $SE = 0.02$, $df = 15$, $t = 1.53$, $p = 0.15$, or for attachment anxiety, $\gamma 020 = 0.07$, $SE = 0.06$, $df = 15$, $t = 1.12$, $p = 0.28$. Hence, amount of politeness in laughter was not associated with client attachment.

Reflectiveness. The partitioning of variance through the empty model

found that 93% of the variance was explained at Level 1, 3% at Level 2, and 4% explained at Level 3. Significance levels cannot be calculated for Level 1, but level 2 and 3 were significant at the $p < 0.005$. Hence, although most of difference in reflectiveness was due to sessions, there were also small differences due to clients and therapists. We did not find a significant effect for attachment avoidance, $\gamma 010 = - 0.06$, $SE = 0.04$, $df = 15$, $t = -1.59$, $p = 0.13$, or for attachment anxiety, $\gamma 020 = -0.02$, $SE = 0.04$, $df = 15$, $t = -0.41$, $p = 0.68$. Hence, amount of reflectiveness in laughter was not associated with client attachment.

Nervousness. The partitioning of variance through the empty model found that 67% of the variance was explained at Level 1, 14% at Level 2, and 19% at Level 3. Significance levels cannot be calculated for Level 1, but both level 2 and 3 were significant, $p < 0.001$. Hence, nervousness fluctuated a lot across sessions, and it also varied across clients and therapists. We found a significant effect for attachment anxiety, $\gamma 020 = 0.50$, $SE = 0.10$, $df = 15$, $t = -5.20$, $p < 0.001$, but not for attachment avoidance, $\gamma 010 = 0.09$, $SE = 0.01$, $df = 15$, $t = 0.93$, $p = 0.36$). Hence, clients who were high in attachment anxiety were judged as having more nervous laughter.

Contemptuousness. The partitioning of variance through the empty model found that 84% of the variance was explained at Level 1, 15% at Level 2, and less than 1% at Level 3. Significance levels cannot be calculated for Level 1, but level 2 was significant, $p < .001$. Hence, contemptuous laughter varied considerably across sessions with some variance due to clients but almost no

variance due to therapists. We found a significant effect for attachment avoidance, $\gamma 010 = 0.19$, *SE* = 0.07, *df* = 15, *t* = 2.82, *p* = .01, but not for attachment anxiety, $\gamma 020 = 0.02$, *SE* = 0.07, *df* = 15, *t* = 0.34, *p* =0 .74. In other words, clients who were avoidantly attached were rated as having more contemptuous laughter.

Summary for Analyses of Laughter Characteristics

In sum, most of the variance in the laughter characteristics was at the session level (ranged from 95% to 67% of variance), with some of the variance attributable to clients (ranged from 15% to 3%), and an even smaller percentage being attributable to therapists (ranged from 1% to 19%).

Summary for Attachment Analyses

Client's attachment avoidance was significantly related to the cheerfulness and contemptuousness observed in client laughter, such that when client's attachment avoidance was high, the client's laughter was rated as less cheerful and more contemptuous.

Client's attachment anxiety was significantly related to nervousness such that when the client's attachment anxiety was high, the client's laughter was rated as more nervous.

Chapter 6: Discussion

Demographics of Laughter across the Course of Psychotherapy

The average client laughed about two times in any given session, and the average laughter event was about 3 seconds. In comparison, crying occurred about one out of every seven sessions of therapy (Robinson et al., 2015), suggesting that client laughter occurs more frequently than crying in psychotherapy.

Furthermore, the average client laughter event could be characterized as mostly polite and reflective, and somewhat cheerful and nervous, but rarely as contemptuous. These findings suggest that clients mostly used laughter as a social lubricant (politeness) and to reflect on their own concerns (reflectiveness). To a lesser extent, laughter expressed positive affect (cheerfulness) and nervousness. In only a few occasions was laughter characterized as anger either directed to self or the therapist (contemptuousness).

These findings are in line with Provine (1993) who found that laughter was largely in response to everyday mundane comments that were not even remotely humorous like, "Where have you been?" or "It was nice meeting you, too." The finding that laughter was rated as more polite than cheerful in the present study fits with Provine's theory that the required stimulus for laughter is typically the interaction with another person rather than a joke.

These findings also provide some support for Nelson's (2012) theory that laughter is largely a relational event that can create both connection and disconnection between the therapist and the client. Thus, clients in the present study, several of whom primarily discussed relationship difficulties, might have laughed as

the therapeutic relationship was developing (hence the laughter was rated high on politeness), while they were exploring their concerns (hence the laughter was rated high on reflectiveness), to lighten the mood (hence the laughter was rated moderately on cheerfulness), and occasionally to express anger (hence there was some contemptuousness observed in the laughter.)

One possible reason for laughter to be rated high on reflectiveness is that we looked at laughter in psychodynamic psychotherapy aimed at generating more insight for the client. These same levels of reflectiveness might not be observed while examining laughter in psychotherapy based on another theoretical orientation, or another form of relationship. For example, psychotherapists who follow a more confrontational, Gestalt based approach might elicit more nervous laughter, while in observing laughter between friends we might observe more cheerfulness. However, laughter in these other forms of psychotherapy and relationships needs to be rated on the above mentioned laughter characteristics.

We found that neither overall client laughter, nor any of the laughter characteristics, changed in amount over the course of therapy. In other words, the duration of the time clients spent laughing did not change as therapy progressed.

Relatedly, most of the variance in laughter characteristics was attributed to sessions (ranging from 67% to 95%), with less to clients (ranging from 3% to 15%) and therapists (from < 1% to 19%). Given that most of the variance was at the session level, it appears that laughter in situation-specific, such that it depends on the specific situations that occur in sessions. In contrast, with crying, 36% of the variance was between quarters of treatment, 13% between clients, and 52% between therapists,

respectively (see Robinson et al., 2015). It might require more of a therapeutic relationship for clients to allow themselves to feel vulnerable enough to cry than for them to laugh. Indeed, laughter (especially polite, cheerful, nervous, and contemptuous laughter) may help them avoid crying.

For two of the laughter characteristics, cheerfulness and nervousness, most of the variance was attributed to level 3 or the therapist level. Of the total variance in cheerfulness 18% was attributed to the therapist level. We found this interesting because it suggests that cheerfulness in client laughter is significantly impacted by therapist characteristics. Given the cheerfulness was related to an expression of positive affect, perhaps some therapist are generally more comfortable using humor in their sessions and thereby encourage clients to laugh in a more cheerful manner. For example, Knox & Hill (in press) in their examination of therapist humor, found that therapist personal factors influence the use of humor. In other words, some therapists might consider humor to be part of their personality, and thereby encourage clients to exhibit more cheerfulness in their laughter.

Similarly, for nervousness in laughter, therapist characteristics seem to have a significant impact on nervousness in client laughter. Perhaps some therapists are more aggregable than others, and therefore are less likely to make clients feel uncomfortable in sessions. Clients working with these therapists might therefore show less nervousness in their laughter. However, future research will have to examine these therapist characteristics of humorousness and agreeableness, before the above mentioned hypotheses can be tested.

Future research could also examine the instances in which laughter which follows crying. Nelson (2012) stated that laughter and crying are both ways of maintaining proximity with the caregiver. Crying is usually a sign of distress, signaling to the caregiver that the child desires closeness. Laughter on the other hand, keeps the caregiver close by signaling positive affect, and a desire to continue to interaction.

Correlations among laughter characteristics

We found small correlations among the five characteristics of laughter (cheerfulness, politeness, reflectiveness, nervousness, and contemptuousness), accounting for 1% to 17% of the variance. Thus, these characteristics were relatively independent, assessing different constructs. This finding about independence was not surprising, given that we created the list for this study trying to choose characteristics that were as distinct as possible. Perhaps because of the clear definitions and extensive training, raters were able to observe differences among types of laughter, which we thought might be especially difficult for contemptuous and nervous laughter.

Our findings suggest that laughter is a multifaceted behavior involving at least five different emotional characteristics: cheerfulness, politeness, reflectiveness, nervousness, and contemptuousness. We cannot state with confidence that this is a comprehensive classification of laughter characteristics, but we did not notice any events that could not be characterized by these characteristics. Future researchers could examine whether other emotional states (e.g., sadness), might also be expressed through laughter.

Laughter as Moderated by Initial Client Attachment Style

Attachment anxiety. When clients had higher rather than lower initial attachment anxiety, they were judged as having more nervousness in their laughter. Similarly, Nelson (2012) argued that laughter is an attachment behavior, an "early-occurring attachment behaviors designed to positively engage caregiver and infant, thereby helping to lay the groundwork for the arousal and regulation of affect throughout life." She also speculated that anxious laughter might be "an attachment appeal for help in regulating negative arousal, almost like crying" (p. 155). Thus, clients who reported higher attachment anxiety seemed to reflect this in their laughter which is observed as being high in nervousness. On the other hand, perhaps clients with high attachment anxiety were worried about the therapists' reactions and nervously tittered to regulate their emotions and prevent the therapist from detaching from them.

Interestingly, attachment anxiety was not associated with any of the other characteristics (cheerfulness, politeness, reflectiveness, and contemptuousness). Based on Nelson's (2012) theory, we had expected that attachment anxiety (which relates to disconnection) would be positively related to politeness and contemptuousness but negatively related to reflectiveness or cheerfulness, but this was not the case in the present study. Perhaps nervousness is the most important construct here.

Attachment avoidance. Those clients who were high on avoidant attachment were judged as having more contemptuousness and less cheerfulness in their laughter. Perhaps this is due to them generally having a negative view of

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others and the world, hence when they laugh in a more contemptuous and less cheerful manner this is a behavioral expression of how they generally see the world.

Alternatively these clients might have deactivated in order to stay as close as they could to therapist (the attachment object) but still avoid being rejected, and so they were more angry and less in tune with their feelings. Once again, this fits with Nelson's (2012) theory, in that she argued that, "hostile laughter can range from friendly 'joshing' to outright disdain." This hostile laughter, according to her, "might rather than 'greasing the wheels' of social interaction, cause them to grind and even come to a halt" (p. 150). Nelson therefore theorized that hostile laughter might occur when a speaker's message is unconsciously hostile and the target accurately picks up the hostility, even though the speaker may deny it. According to her, this form of hostile laughter "can also represent characteristic patterns of interpersonal affect arousal and regulation based on attachment wounds and defenses" (p. 150).

We did not find a significant relationship between client pretreatment attachment avoidance and any of the other three characteristics of laughter (politeness, reflectiveness, and nervousness). Thus, at least in the present study, these characteristics did not appear to be moderated by attachment avoidance. These findings were surprising because we had expected attachment avoidance to be related negatively to reflectiveness, and positively

to politeness and nervousness but apparently these variables, as measured here, were not related to attachment avoidance.

Comparison between Findings in the Current Study and the Previous Literature

There are several differences between the present study and previous research on laughter in psychotherapy. For example, Gervaize, Mahrer, and Markow (1984) in there examination of 280 hours of audiotaped sessions conducted by 15 professional therapists with 75 adult patients found 60 instances of strong, hearty laughter, and 30 instances of mild/moderate laughter. On the other hand, in this study we studied all laughter events and did not classify them into mild and moderate laughter or strong laughter (although we did rate the intensity of the characteristics and found them to be moderate on average). Our impression, however, was that most of the laughter was mild rather than strong and hearty, so results probably cannot be compared between the two studies. One reason for the lack of heart laughter in the present study when compared to Gervaize et al. (1984) might relate to the form of psychotherapy that was practiced. For example, Gervaize et al. (1984) reported that 73.3% of therapist statements preceding events rated "strong laughter" was categorized as therapist risky behavior (for example, ridiculous explanation/description of patient, instruction to carry out affect-laden behavior with heightened intensity, carrying out risk behavior as/for the patient etc.) Since most psychotherapist in the current study identified as either psychodynamic, the goal of psychotherapy was helping the client gain insight regarding their intrapersonal or interpersonal patterns.

In contrast, Falk and Hill (1994) found that in 236 laughter events in eight cases of brief psychotherapy, most of the client laughter was mild and moderate, and

there were only eight instances of strong laughter. Thus, the present sample seems to be more similar to the Falk and Hill sample than to the Gervaize et al. (1984) sample, although Falk and Hill studied experienced therapists, whereas we studied doctoral student therapists.

An additional difference between studies was that Gervaize et al. (1984) based their study on the premise that strong laughter was always "a welcomed and desirable event" (p. 510). In contrast, in the present study laughter events were sometimes rated as more contemptuous or nervous than cheerful, polite or reflective. Therefore, perhaps not all laughter is as positive as Gervaize et al. assumed, although this may be more the case for strong, hearty laughter than for more mild laughter. It would be interesting to examine how the intensity of the five laughter characteristics (cheerfulness, politeness, reflectiveness, nervousness and contemptuousness) relates to session outcome measures or measures of the therapeutic alliance.

We should note that we only examined the aspect of Nelson's (2012) theory about how laughter relates to the attachment system, but we did not consider how other theorized systems, such as the curiosity/ exploratory system (Bischoff, 1975) or the affiliative system (Bowlby, 1969) were associated with laughter. For example, Nelson linked laughter with the exploration/ curiosity system in addition to the attachment system as an infant develops. She said, "When a new task is accomplished, laughter is frequently the result" (p. 66). Nelson connected the infant's inborn exploratory/ play system, motivated by an urge to experience the novel, with the incongruity theory of laughter, postulating that novelty and surprise are key ingredients for much of our laughter. Nelson also cited Bowlby that the

affiliative system represents the "desire to do things in company with others" (Bowlby, 1969, p. 229) and includes the behavioral expressions of sociability and friendliness. Thus, Nelson argued that affiliative bonds are often playful as well, revolving around positive arousal and laughter. It would thus be interesting to investigate laughter not only in relation to attachment but also in conjunction with the curiosity/ exploratory system (Bischoff,1975) and the affiliative system (Bowlby, 1969).

Strengths and Limitations

A strength of this study is that it was conducted on a relatively large data set for this type of research that requires intensive coding. Also, the use of a separate team of judges initially coding the data allowed the final team of judges to focus on the sessions that had laughter. Previous research (Gervaize et al., 1985, Falk & Hill, 1992; Marci et al., 2004) looked at a smaller number of laughter event and did not conduct the coding process in two different phases with different coders.

Given that we created and defined and refined the laughter characteristics for this study, the chosen characteristics might not be the only or the most appropriate characteristics. We did try to rate defensiveness but could not get consensus on it or differentiate that from nervousness or contemptuousness. Other possible characteristics include joy, surprise, embarrassment, or sadness. However, we would note that even five characteristics was a lot for raters to keep in mind, so there is probably a limit to the number that can be reliably rated. One could argue, of course, for having separate teams of judges rate each of the characteristics, but we thought

that it was helpful to have one team of judges so that they could differentiate the characteristics.

An example of how our category system was limited is that we did not consider the interaction of laughter and crying. Occasionally laughter followed crying, and this did not fit well into any of the five characteristics of laughter (cheerfulness, politeness, reflectiveness, nervousness, and contemptuousness). In such cases, we rated the laughter as high on reflectiveness if we assessed that the event helped the client engage with the therapist, and nervousness if the laughter seemed to be an attempt to disengage with the therapist. However, we did not feel that this completely captured the characteristic observed in the laughter.

Nelson (2012) theorized that laughter and grief are often connected and discussed an example of such laughter occurring during bereavement (Keltner & Bonanno, 1997). According to her, such laughter can be "a defense against the pain of loss" or "part of the reorganization process, contributing to the realignment of the internal attachment connection to the lost loved one that is part of the healing process" (p. 156).

Another limitation is that we did watched only five minutes before a laughter event and thus might have missed some of the relevant context. Judges may not have been familiar enough with the whole context of the cases. Under the constraints of this study, judges therefore may have had to make too many assumptions about the clients' reasons for laughter. We did, however, watch the events in sequence so we did have some of the context of the cases.

The sample of observed sessions also presents a limitation. We watched only sessions 1 to 5 and 16 to 20, and thus laughter between those sessions and later in therapy was missed. In addition, laughter that occurred in cases with less than eight sessions was also missed.

The therapists in this data set were all advanced doctoral students who generally adhered to a psychodynamic or humanistic in terms of their theoretical orientation as measured by the TOPS (Worthington & Dillon, 2003). In the current sample, therapist on average rated themselves as highest on the psychodynamic/ psychoanalytic subscale (M=7.36, SD= 1.85) of the TOPS (Worthington & Dillon, 2003) as opposed to the five other theoretical orientations (Humanistic/Existential, Cognitive/Behavioral, Family Systems, Feminist, Multicultural.) More experienced therapists, or those from other theoretical orientations, such as emotion focused (Greenberg & Watson, 2005) might have elicited more of different types of laughter from their clients.

Also clients in psychotherapy in other cultures might show different amounts or different characteristics of laughter or different attachment styles, and therefore our findings cannot be generalized to other cultural contexts. For example Schmitt et al. (2004) and Alonso-Arbiol, Balluerka, and Shaver (2007) found cross-cultural differences in the attachment measure. Alonso-Arbiol et al. found that the Spanish attachment anxiety mean was higher than the American mean, whereas the Spanish attachment avoidance mean was slightly lower than the American mean. Laughter characteristics and how they relate to the clients attachment style might therefore be different in different cultures.

Implications for Practice and Research

Our findings suggest that clients' laughter might reflect a range of characteristics such as cheerfulness, politeness, reflectiveness, nervousness, and contemptuousness. Also, these characteristics might have a relationship with the clients' pretreatment attachment style. Client laughter could therefore be an unobtrusive and spontaneous measure of a client's attachment tendencies. As Provine, (2001) stated, given that laughter is "largely unplanned and uncensored, it is a powerful probe into social relationships" (p. 3).

We suggest that therapists pay attention to characteristics reflected in client laughter (e.g. cheerfulness, nervousness, politeness, reflectiveness, and contemptuousness) and consider how these provide insights concerning the client's attachment style and involvement in the therapy process. Therapists could reflect about the interpersonal role of client laughter, and consider what role the laughter plays in the therapeutic process.

It would also be interesting to see if these characteristics of laughter were prevent in different amounts for other forms of psychotherapy, for example do more provocative forms of therapy elicit more nervousness or contemptuousness in the laughter. We could also e could examine how these characteristics show up in other forms of relationships, for example would laughter between friends be rated as too cheerful.

Future researchers could also examine therapist laughter and how it compares or differs from client laughter. As Marci, Moran, and Orr (2004) found in their study of the interpersonal role of laughter during psychotherapy, the mean skin conductivity

level significantly increased during a laughter event, regardless of whether the patient or therapist was speaking. However skin conductivity change scores were significantly larger when patients and therapists laughed together as compared with when either was laughing alone. They went on to suggest that this finding provides support for the view that laughter during conversation is highly coordinated activity. Therefore, examining client laughter in isolation might only be looking at a part of the puzzle, and client and therapist laughter perhaps needs to be examined together to get a better understanding of how the behavior is a co-constructed activity (Jefferson et al., 1987). For example, it would be interesting to see if sessions in which therapists and clients laugh together are rated differently, in terms of the therapeutic alliance or the session outcome, than sessions in which the client or therapist laughed alone.

We could also examine if therapists and clients discuss the presence of laughter during the therapy sessions, and if therapists tend to notice and discuss certain laughter characteristics that are associated with negative arousal and therefore seem incongruent, more than characteristics associated with positive or neutral affect. In other words, do therapists discuss characteristics such as nervousness or contemptuousness more frequently than characteristics such as cheerfulness, politeness and reflectiveness, because the later three are more frequently associated with positive or neutral affect?

Future research could also explore if these results can be replicated with therapists who are more experienced and attuned theoretically to eliciting a range of

emotion in clients. In addition, it would be interesting to interview clients and

therapists about their experiences with different types of laughter in sessions.

Finally, as Nelson (2012) suggested, laughing with a client, when appropriate,

can be a "growth-producing and affect-regulating behavior," (p. 140) contributing to

the strengthening of attachment bond between the therapist and the client, and when it

is not appropriate it can "be a mutual enactment that may replicate old, or even create

new, attachment wounds"(p. 140). Therefore, future researchers could explore the

relationship between the characteristics of laughter and client's evaluation of session

quality.

Appendix A
Types of laughter coding

Date:

Team Members:

Therapist #:

Client #:

Session #:

Event #

Event start and stop time:

Type	Absence				Presence
Cheerful	1	2	3	4	5
Polite	1	2	3	4	5
Reflective	1	2	3	4	5
Contemptuous	1	2	3	4	5
Nervous	1	2	3	4	5

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