Research Critiques Incite Words of Mass Destruction

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What were they thinking? How could they be so critical of the well-known health benefits of laughter? "I have no clue what you're saying." Maybe we should back up. Okay, let's begin this article with the next paragraph.

Over the past four years, humor researchers Martin (2001, 2002), McGhee (1999, 2002), and Provine (2000) performed in-depth autopsies of nearly 50 studies on the physiological effects of laughter. [*Confession:* Admittedly, I even updated and affirmed their critiques in my review (Berk, 2002).] After ripping the methodology of each study to smithereens, consensus was reached among these researchers that much of the accumulated research to date is sparse, weak, inconclusive, and absolutely putrid. In other words, the enthusiastic claims about many of the physiological effects (Clay, 1997; McGuire, 1999; Zand, Spreen, & LaValle, 1999; Ziegler, 1995) are premature and exaggerated.

These three researchers delivered presentations at the 2002 and 2003 annual AATH Conferences, a credit to conference organizers Patty Wooten and Ed Dunkelblau for using the conference as a forum to air important research issues. However, at the 2003 conference in Chicago, one of these researchers was particularly provocative. Considerable negative discussion ensued, plus a few attendees actually invested in riot gear. Kidding. You can intuit the emotional trajectory these responses were taking. Before you know it, we'll be seeing advertisements on late night TV for a video, such as "AATHers Gone Wild!" Over the past year, various communications by AATH

members indicated there is confusion over the researcher's conclusions and misunderstandings about the state of our art.

My quest here is to clarify the issues and propose a strategy we can all use in our work and presentations. Why is this so important? The research furnishes the scientific foundation for *why* we do what we do as humor professionals, *what* we can do with our clients, patients, students, or audiences, and *how* we can extend our work in new directions. In other words, the research not only circumscribes boundaries for our current practice, but also provides a springboard for diving into untested waters.

The increased sales of riot apparel at our annual conference in response to the recent research critiques can only weaken our organization and its mission. Our ability to thrive hinges on our unity, growth, and the scientific research base that can only add to our credibility. The remainder of the article is presented in this spirit of professional responsibility and reconciliation.

Research on Humor and Laughter

The psychophysiological research domain is considerably broader than many practitioners might imagine. [*Digression Alert:* You remember that Chris Columbus rented 3 ships to sail to the New World: The Nina, the Queen Latifah II Royal Caribbean, and the Goodship Lollipop. *End of Digression*] Consistent with this number of ships, there are, you guessed it, two streams of research: (1) the psychological and (2) the physiological.

Psychological Effects

The psychological effects relate primarily to humor as a coping mechanism and, to a lesser extent, its enhancement of interpersonal relationships. The former use is based

on the role of *detachment,* derived from two Latin root words, “de” meaning, “remove,” and “tachmentus,” meaning, “this tire iron from my skull.” Humor enables one to distance oneself from professional as well as personal problem situations, that is, to detach or disengage mentally to put those situations into a proper perspective. Humor as an adaptive coping mechanism underlies the limited behavioral research in this area and is also the conceptualization adopted by psychological theorists such as Sigmund Freud, Gordon Allport, Rollo May, and Frasier Crane.

Using humor involves a cognitive shift in perspective that allows one to separate from an immediate threat or aversive stimulus in order to view that threat from a different frame of reference, thereby reducing the “normal” emotional responses, which might include feelings of shame, embarrassment, anxiety, tension, stress, depression, loneliness, helplessness, escape, anger, frustration, hostility, low self-esteem, grief, and incontinence. By jolting us out of our habitual frame of mind, humor might decrease or even eliminate those negative feelings. In this case, being “out of your mind” can promote a sense of control, self-protection, empowerment, and superiority OVER the problem. In other words, *you* rule. *You* da man or woman. You’re Rambo or Ramboette!

These hypothesized and, in fact, highly desired effects of humor as a coping strategy are somewhat supported by available quantitative (correlation) and qualitative research evidence (Lefcourt, 2001). Most of these studies using existing self-report humor measures yield consistent, although relatively weak, correlations with various mental health variables, such as anxiety, tension, stress, depression, and loneliness (Martin, 2003). However, there have been controlled laboratory studies that indicate

humor improves mood and reduces negative emotional consequences of experimentally-induced stress. Further, researchers are currently investigating what types or styles of humor (e.g., self-deprecating, sarcastic, disparagement) are effective in coping with different threatening situations.

This area of psychological research has been extended to the effects of humor on interpersonal relationships. If you're a successful "coper," you should be more socially competent and adept at attracting and maintaining relationships. There is mounting evidence of these humor effects on social support and the enhancement of interpersonal relationships, such as non-romantic friendships and dating, but none on marriage as yet (Martin, 2001, 2002).

Physiological Effects

In contrast to the preceding effects which pertain to the emotional responses, the physiological effects relate to the impact of laughter on the entire body. [*Dedication:* This paragraph is dedicated to the college men and women who unselfishly contributed their spit and blood for chemical analysis and their heart rate, blood pressure, temperature, respiration, brain, skin, and liver in the name of laughter research.] These effects involve the central nervous, muscular, respiratory, circulatory, endocrine, immune, and cardiovascular systems. Some minor effects have been noticed on gums, lips, tongue, hair, eardrums, and toe nails.

The research reviewed in this area can be lumped into seven physiological effects: (1) improves mental functioning, (2) exercises and relaxes muscles, (3) improves respiration, (4) stimulates circulation, (5) decreases stress hormones, (6) increases immune system's defenses, and (7) increases pain threshold and tolerance. The criticisms

of the quality of the studies conducted have focused on (4)–(7). The problems identified pertain to (a) internal design flaws, (b) invalid results, and/or (c) lack of generalizability of results.

The internal flaws include the following:

- small sample size (as few as 5–10 subjects)
- no randomized design
- no control group
- lack of appropriate controls to isolate independent variable
- no standardized baseline measurement
- unreliable measures of blood and saliva assays
- low statistical power
- no statistical tests or too many

Due to some of these flaws, the results from several studies were not statistically significant, in the opposite direction hypothesized, or attributable to uncontrolled factors. The generalizability of the results from many of the studies was restricted due to small and/or unrepresentative samples and artificial or laboratory-based procedures.

Collectively, the corpus of research in all seven areas suffers simply from too few well-designed studies to draw valid conclusions about the health-enhancing physiological changes in the body produced from laughter. The highest quality studies were executed on the effects of comedy on pain tolerance, which provide strong evidence of increased pain tolerance not merely due to distraction. It also continues for at least a half an hour, even after the subjects' moods have returned to baseline. However, there is still no empirical evidence that hearty laughter has pain-killing effects or that laughter stimulates

the production of endorphins. The weakest investigations are those on stress hormones and the immune system's defenses. The results were inconsistent, contradictory, or inconclusive because of the aforementioned flaws. In fact, the methodological weaknesses in these studies may have actually prevented the desired physiological "benefits" from being detected.

Where Do We Go From Here?

Obviously, tankers of bodily fluids need to be collected and analyzed in a bazillion methodologically rigorous studies before sufficient scientific evidence can be accumulated to substantiate the health benefit claims already being made. (*Possible Excuse:* The deficiencies in previous research may be due, in part, to the lack of adequate research funding.) The research reviews cited in this article contain specific directions for those studies. The paucity of quality research on the physiological effects is our Achilles' heel or, maybe, 12EEE-size foot.

Given this faulty and rather inadequate research foundation, as humor professionals, what should we do? Take down our shingles (or cardboard signs)? Incinerate our props and costumes? Stop advertising in this newsletter? Find a job in homeland security? Maybe all of the above. Get real. Evidence-based practice in education, psychology, business, government, and healthcare is an ideal. So it is with humor and laughter. Although we should be relentless in our pursuit of the "Gold," my professional motto has always been: "Go for the Bronze!"

In presentations on humor and laughter, I recommend introducing your audience to the list of possible psychological and physiological effects. However, your

interpretation of these effects using the *cardiac approach,* which says: "I know in my heart these effects are real," won't fly. Instead, consider the following:

> The evidence for the psychological benefits is much stronger than the evidence for the physiological health benefits. The latter are *suggested* not conclusive effects based on current research findings. Much work needs to be done in all of these areas.

Conveying the state of *our* art accurately to the uninformed and less informed is our professional obligation and responsibility. Any misrepresentation of that state is irresponsible for you and AATH.

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