

**STATE OF THE ART AND SCIENCE**

**The Science of Comedy (Sort of)**

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**Abstract**

From an academic point of view, humor studies have traditionally lived in the rather unfunny world of philosophy departments. More recently, psychologists and neuroscientists have begun to study mechanisms of humor and laughter. An argument can be made that approaching humor studies from the perspective of comedy creation offers practical tools for using comedy and humor in everyday communication and connection.

**Understudied Humor**

For purposes of this article, think of *laughter* as sounds humans make when amused. People also laugh for many other reasons: we laugh because others laugh, we laugh to demonstrate agreement, or we laugh when we are embarrassed or uncomfortable. *Humor* is the state of being amused, although it might not be accompanied by laughter. Humor and laughter were not seen as valuable topics for philosophical or scientific study until the 1980s,<sup>1,2</sup> perhaps due to their assumed connection to body instead of mind and because laughter, like other bodily functions, is often difficult to control. Humor is also often thought of as “low”—that is, enjoyed by the people as opposed to the elite.

Recently, scientific research on the neuroscience of laughter has showcased the potential intellectual benefits of a brain wired to find humor and the connections between humor responses and common biases and heuristics.<sup>3</sup> As will be discussed, my own work on the pedagogy of *comedy*—which I define as an intentionally created event or work designed to evoke laughter or humor in an audience—appears to provide a practical roadmap for leveraging the positive benefits of some theory-based tools for generating humor and laughter without falling into some of the obvious potential downsides, such as causing unintentional offense or creating divisions between groups.

**Theories of Laughter and Humor**

Early philosophers focused on the negative elements of humor and laughter. The superiority theory of humor attributed to Plato and later promoted by Thomas Hobbes, among others, holds that the primary motivator for humor is triumph or pleasure at the pain, flaws, or indignities of others.<sup>1</sup> The superiority theory also implies that laughter and humor are inherently negative, in that humor requires ridicule or disparaging others. We are thought to laugh “at” something or someone because we see that person as

genuinely lesser than ourselves. Certainly, laughter borne of derision, insult, and **ridicule** are still common today, from playgrounds to televised roasts and social media sites.

A second major theory of humor is tension and release.<sup>1</sup> Based on Sigmund Freud's theory of the unconscious, it suggests that repression of sexual or aggressive thoughts and urges creates a buildup of energy released in the form of laughter. Freud saw laughter and humor as providing a kind of release valve and thus the types of material that generate laughter are necessarily base and appealing to the id,<sup>1</sup> the childlike portion of the human psyche. Although the psychological ideas behind this theory have been largely debunked,<sup>4</sup> it is worthwhile to note that modern comedy makes deliberate use of tension and release. For example, cringe comedy television shows—like *The Office* or *Curb Your Enthusiasm*—or the antics of comedians like Andy Kaufman or Eric Andre eschew traditional release via punchline, instead building tension through deliberate provocation and awkwardness during performances as well as by creating discomfort among audience members.

The third and currently most broadly popular of the major philosophical theories of humor is the incongruity theory, developed by Immanuel Kant.<sup>1</sup> Later adherents included Arthur Schopenhauer and Søren Kierkegaard.<sup>1</sup> This theory holds that humor results when our brains perceive 2 things as coexisting in a manner that does not at first appear to make logical sense and that laughter or humor occurs when the discomfort caused by this incongruity is resolved in some way. A simple example of this is a pun. Humor results when we discover that a word that initially appears incongruent in the context in which we first encounter it has another meaning that makes logical sense when a different context is revealed. In the joke, “Light travels faster than sound. That’s why some people seem bright until they speak,”<sup>5</sup> an initial mental image of a person glowing “brightly” makes more sense when we understand it as referring to intelligence.

Variations on incongruity theory include Henri Bergson's silent film-inspired contention that humor is created when a human being behaves rigidly like a machine<sup>6</sup> and Mikhail Bakhtin's surmising that humor results when social roles are reversed: the powerful are taken down or the powerless become powerful, as occurred during medieval carnivals when a peasant became a carnival king for the day.<sup>7</sup> Another theory combining the superiority and incongruity theories but with a more specific focus on resolution and release is social scientist Peter McGraw's benign violation theory, which posits that a joke or a moment can be perceived as humorous if it is seen simultaneously as a violation of norms and as benign.<sup>8</sup>

### **Scientific Thought on Laughter and Humor**

Incongruity theory has been bolstered by the study of heuristics and biases and by neuroscience. To use the terminology of Daniel Kahneman, the brain has 2 separate systems: System 1 (the fast brain) is primarily automatic and intuitive, and System 2 (the slow brain) proceeds deliberately and logically.<sup>9</sup> Neuroscientists have suggested a possible genetic advantage to laughter and humor, theorizing that pleasurable experiences of discovering and resolving incongruity rewards the brain with dopamine and trains us to use System 2 to test (potentially incorrect) conclusions, to which our faster, but less diligent System 1 jumps.<sup>4</sup>

Animal studies have shown that apes and dogs use sounds similar to laughter when participating in activities that mimic real life, such as play fighting.<sup>4</sup> This finding suggests that we humans might also laugh to signal others about our intentions and that we are

rewarded through humor and laughter for using play to practice certain kinds of social interactions. There is perhaps no better example of what might be called the play theory at work in the world of comedy than the humor and laughter generated by those watching or participating in **improvisational games** used on The Second City stages and in its training programs.

### **A Theory of Created Comedy**

My personal theory of created comedy reframes existing humor and laughter theories into a set of tools that comedians manipulate to create work that generates humor or laughter.<sup>10</sup> I propose that in generating and refining their work, comedians use 3 elements. The first element is *recognition*. It could be argued that recognition is implicit in most traditional theories of humor, but for the work of comedy it is primary. One of the easiest ways for a comedian to get an audience to laugh is to describe something familiar; it can be a local landmark, an impression of a public figure, or a reference to the television show that everyone is currently watching. Even more likely to incite laughter are references specific to or particularly salient for a given audience. When I was writing corporate comedy shows, we referred to this as “Bob from Accounting”: inserting an actual employee’s name into a comedy sketch would invariably get huge laughs. Social science research suggests that the strongest laughter is generated when a comedian shares an observation that supports or reflects audience members’ experiences of the world.<sup>11</sup> Genuinely shared laughter creates bonds through mutual understanding.

I label the second element needed for comedy *pain*. The tension and release, incongruity, and superiority theories involve this element either directly or indirectly in the form of tension, cognitive dissonance, and embarrassment or shame, respectively. A technique frequently used in generating comedy is to begin by listing recognizable elements (events, people, occupations) and then applying some element of pain. For example, listing several occupations and then improvising questions, such as “What would the world’s worst version of each of those occupations do or say?” can illuminate common pain points. Or a standup routine can be created by brainstorming common experiences that already contain elements of pain, such as terrible first dates.

The third element is a context that allows us to reflect on these experiences with some degree of objectivity, equanimity, or sense of safety, perhaps making them benign. I prefer to describe this element as *distance*. Distance can be temporal, as in the phrase “Tragedy plus time equals comedy,” attributed to Steve Allen and others.<sup>12</sup> Or it can be spatial and psychological, as evident in Mel Brooks saying that “Tragedy is if I’ll cut a finger, I go to Mount Sinai, get an X-ray, have to change bandages. Comedy is if you walk into an open sewer and die.”<sup>13</sup>

Comedians use these 3 elements almost as one would use faders on a mixing board in a sound studio. Something particularly recognizable requires just a light level of cognitive dissonance to provide distance and pain, such as seeing your personal experience reflected in a comedy routine. Very painful or highly taboo subjects require a great deal of distance in order to feel funny. I warn my college-age comedy students that they have a much higher tolerance for and distance from “edgy” takes on topics like sex, death, and religion than their parents in the audience. In the same way, comedians visiting campus might find that their privileged distance on issues of race and gender is not reciprocated by similar feelings of safety and recognition in a more sensitive student group.

### **Using Comedy Theory Tools to Better Use Humor in Real Life**

As a teacher of aspiring comedians, I am often asked whether I can teach someone to be funny. My goal is to provide the tools that allow for better and more intentional comedy creation. I have also seen that understanding the tools of comedy creation can allow those in other settings to reap some of the **benefits of humor**. Below, I suggest how these tools of comedy can be brought into interactions to strengthen connections and diffuse tensions.

*Practice recognition and self-disclosure.* Recognition and self-disclosure are at the heart of good comedy and are the easiest to implement safely. Professional comedians mine their own lives for material and often some of the most resonant comedy created by my students stems from very specific details taken from their own lived experiences. An exercise I created for a workshop on diversity and inclusion, which had participants share the details of how they personally go grocery shopping, consistently generated a large amount of shared laughter. When our daughter was hospitalized for cancer treatment, my husband and I deliberately used this training when interacting with her physicians and other caregivers. We found that the combination of a tiny bit of vulnerability related to sharing a piece of personal information and the recognition of common experiences provided one of the strongest and safest ways for us to use the tools of comedy to make deeper connections with care team members.

*Think about comedy and humor as more than just jokes.* While it is fine to share what my students now term “dad jokes”—the kind of old-school setup and punchline jokes rarely used in contemporary comedy—you can share humor just by releasing tension and by recognizing awkwardness or discomfort without making any kind of formal joke. Laughter is inherently social and shared laughter creates more points of connection.

*Play a game.* Many of the games used in improvisation can be adapted to other situations. You can use the improv game “Last Word” in any communication situation, but it can be particularly useful as a way to **encourage listening** between colleagues. The goal is to use the last word said to you as the first word in your response. Once you are comfortable with the technique, it could even be brought into interactions with patients. Physicians should give themselves the additional challenge of playing the game without patients noticing. It will both force physicians to fully listen and connect as well as create a sense of play that can short-circuit negativity or argument.

Understanding the comedic element of distance can also help those in the medical community be more aware of when their own use of humor or comedy might entail more risk. Just as comedians need to be aware that college students tend to have more psychological distance on sexual topics than their parents, so those in a medical field need to be aware that they might have greater comfort in joking about certain topics than patients due to their greater intellectual distance (based on repeated exposure).

A strong case can be made for more rigorous academic research on the applications of comedy. All human beings use various forms of comedy to communicate. In a time when our political leaders and the media can't seem to agree on when a joke is a joke, perhaps we need more academic experts in comedy to call upon.

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