



HOW HUMOR WORKS

A clear proposal for a classic question.

*"Many theorists seem to confuse offering the necessary conditions for a response to count as humor with explaining why we find one thing funny rather than another. **This second question, what would be sufficient for an object to be found funny, is the Holy Grail of humor studies.**"*

-Aaron Smuts

*"No single theory yet can explain the diverse forms and functions of humor and laughter."
-Gil Greengross & Jeffrey R. Miller*

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If you can read this, you've laughed. So has everyone else. It's part of our human instincts, it's part of our entertainment, it's fundamental to human existence, and it's actually *a total mystery*. According to the available sources, no one has ever come up with a satisfactory explanation for *what laughter is* or *why people do it*. But it seems like damn near everyone has tried. Plato, Aristotle, Sigmund Freud, and many, many more in recent history.

Studies have even been done *of the studies*, and have found or reviewed as many as a hundred possible theories, and yet and still, it's been said multiple times that no simple, complete, and logical explanation has *ever* emerged. Such an explanation is so sought after in fact, that it's reached the point of being called a *"holy grail" of philosophy*. With that in mind, I'm going to propose an idea that can explain the findings of the previous incomplete major theories on laughter, and if true, might even *be* that holy grail. But first, let's take a quick look at some of the previous ideas, and where it seems that each works and doesn't work:

	Superiority Theory	Incongruity Theory	Relief Theory	"Anti-Robotic Theory"	"Aldrin's Theory"	"Play Theory"	False Alarm Theory	Disabling Theory	Status Loss Theory
Survival Purpose			Green	Green		Green	Green	Green	Green
Why We Laugh Out Loud				Green		Green	Green		Green
Explain & Improve Known Funny Jokes							Black		Green
Why some things fit but are NOT funny		Black							Green
Tickling			Green			Green	Green	Green	
Puns		Green	Green	Green	Green	Green	Green	Green	Green
Pranks	Green			Green	Green	Green	Green		Green
Farts	Green		Green	Green	Green				Green
Evolution of the Physical Reaction						Green			Green
"Cruel" laughter at weaker people	Green					Black	Green		Green
Laughing when scary animals prove harmless	Green		Green				Green	Green	Green
Self-Deprecation		Green	Green	Green		Green	Green		Green
Not laughing at loved ones	Black			Black		Black	Green	Green	Green
The role of "Surprise"	Green	Green	Green				Green		Green
The role of "Absurdity"	Green			Green	Green				Green

Solid Green = Explained.	Solid Black = Contradiction.
Outlined Green = Possibly Explained.	Outlined Black = Possible Contradiction.

Here are some short explanations of each theory, via wikipedia.org/wiki/Theories_of_humor, the Internet Encyclopedia of Philosophy at iep.utm.edu/humor, and other sources as listed:

Superiority Theory

"The passion of laughter is nothing else but sudden glory arising from some sudden conception of some eminency in ourselves, by comparison with the infirmity of others, or with our own formerly." -Thomas Hobbes
"For Aristotle, we laugh at inferior or ugly individuals, because we feel a joy at feeling superior to them."
-Wikipedia

Incongruity Theory

"The reigning theory of humor," according to the Internet Encyclopedia of Philosophy.
"In everything that is to excite a lively laugh there must be something absurd (in which the understanding, therefore, can find no satisfaction). Laughter is an affection arising from the sudden transformation of a strained expectation into nothing." -Immanuel Kant
"A failure of a concept to account for an object of thought . . . when the particular outstrips the general, we are faced with an incongruity. The greater and more unexpected this incongruity, the more violent will be the laughter." -Arthur Schopenhauer
"Taking pleasure in a cognitive shift." -John Morreall

Relief Theory

"Laughter is a homeostatic mechanism by which psychological tension is reduced. Humor may thus for example serve to facilitate relief of the tension caused by one's fears. Laughter and mirth, according to relief theory, result from this release of nervous energy." -Wikipedia

"Anti-Robotic Theory" (Henri Bergson, 1900)

"Humor serves as a social corrective, helping people recognize behaviors that are inhospitable to human flourishing." -Aaron Smuts, IEP
"The mechanical encrusted upon the living." -Henri Bergson
~The idea that laughter arises as a means of reminding ourselves and others not to be robotic or too automatic in our behaviors, and to accentuate the errors that arise from that mistake.

Aldrin's Theory (Buzz Aldrin via The Ali G Show)

"Things are funny because they mix the real with the absurd."

"Play" Theory (Max Eastman, 1936)

"Eastman considers humor to be a form of play, because humor involves a disinterested stance, certain kinds of humor involve mock aggression and insults, and because some forms of play activities result in humorous amusement." -Aaron Smuts, IEP

False Alarm Theory (V.S. Ramachandran, 1998)

"Laughter (and humor) involves the gradual build-up of expectation (a model) followed by a sudden twist or anomaly that entails a change in the model--but only as long as the new model is non-threatening--so that there is a deflation of expectation. The loud explosive sound is produced, we suggest, to inform conspecifics that there has been a 'false alarm', to which they need not orient." -Ramachandran

Disabling Theory (Wallace Chafe, 1987)

"We humans live in a world full of unique objects . . . a breeze on our cheek, the barking of a dog. That we have never experienced before. But we would be quite unable to function if everything we encountered in daily life were new and unique ..." -Chafe
"Humor disables the subject's serious relation -- any relation -- to the object. Wallace Chafe has called this the 'disabling mechanism.'" -Alexander Kozintsev, 2011

The last concept on the graph is the subject of this paper. It's called "Status Loss Theory," and its explanation for humor and humorous laughter can be presented in pretty simple terms.

Basically, people evolved in small groups. When those groups were organized, with everyone knowing who to follow, they performed better. But if they had to *fight* each other for leadership,

their most capable people would get hurt. Thus, over time, we as humans evolved instincts that allowed us to *peacefully* determine who our leaders were. Laughter evolved for precisely this role, as a verbal signal that evolved from the *gasp*, which drew in oxygen at the sign of danger or harm to oneself or others, into a *rapid-fire* form of gasp starting from seeing specific forms of misfortune, that allowed humans (and likely some other social animals with breath control) to signal each other and *peacefully determine, as a group, who they would not follow*.

Now, this is triggered by a specific set of circumstances in the brain, and it's probably best expressed as an informal equation:

$$\text{Humor} = \frac{(\text{Quality}_{\text{expected}} - \text{Quality}_{\text{displayed}}) \times \text{Noticeability} \times \text{Validity}}{\text{Anxiety}}$$

Which can be shortened, among other ways, to $H = (-\Delta Q)NV / A$. Either way, this states that humor is equivalent to the difference in quality between what a person expects in something and what's actually displayed, multiplied by how noticeable the difference is, multiplied by how valid the brain finds it to be, and the whole thing divided by the amount of anxiety the person feels. Anything that someone observes becomes *sufficient* to be humorous, and create laughter, as this "equation" or "ratio," as judged by the brain, becomes greater than 0, starting in the smallest amounts with a slight diaphragm spasm, small feeling of pleasure, or partial smile. *This actually, if true, is likely to be Smuts's "Holy Grail,"* so let's go into more detail.

In order to laugh at something or someone, we must have a certain expectation in terms of that person or thing's quality or capability that must be violated by what we actually observe. It must obviously be a noticeably wrong or low-quality thing, and the brain has to find it to be valid, and must not feel too much anxiety from what it sees or what's going on at the time. The "equation" form lets us show that if any one of the things multiplied in the top of the fraction are 0, then the whole equation's result will be 0 (anything multiplied by 0 gives you 0). And if the bottom part is too large a value, it will nullify the whole thing also (by the way, if the bottom part is reduced to 0, it will of course render the equation undefined, if this is bothersome, it can just as easily be imagined as "Anxiety + 1").

So if we *don't* laugh at something, it's because...

1) We didn't expect a high enough quality of it. For example, humble people get mocked or laughed at far less than those who are arrogant or try to create high expectations of themselves. Also, as we laugh at something, our expectations lower, *so it must go lower in quality in new ways to stay funny. Which is why a repeated joke gets less and less funny.*

2) We don't find what's been displayed to be low quality. For example, many people won't laugh at "gay teasing" (like "how about a skirt to go with that martini?") because they don't feel that being gay is a low-quality trait.

3) The error isn't noticeable to us. For example, people in physics may have "inside" jokes that require some knowledge of the field to identify, which I personally won't notice.

4) Our brain doesn't find the error to be *valid*. Jokes that are "corny" or "cheesy" are not believable or valid to the brain. But also, the brain judges *misplacements* of things as errors, and if the misplacement isn't a close-enough mistake (i.e. something that does have something in common with where it's incorrectly put), then the brain doesn't find it valid and won't laugh. Note that the *error itself* must be valid, not the method of showing it. So a puppet can make us laugh, *if* the puppet is showing a valid weakness or error in someone or something else.

5) We feel too much *anxiety*. Since, according to our theory, laughter is supposed to be a way of *peacefully* forming a social order, we won't laugh if we feel there is a threat of violence from the person who is going to lose status from it, or if we may be in a situation where making noise is dangerous, OR if we worry a loved one will lose status because of our laughter. Thus, the general feeling of anxiety nullifies laughter. This includes anxiety from other sources too, thus, if a loved one just died, you're unlikely to laugh at *anything*. Which means that *when we say a joke is "too soon," it means we still have anxiety associated with the subject*.

Humor and laughter result when all of these are satisfied. Also, if we notice *multiple* quality gaps at once, the humor is increased, but we'll discuss that more in our examples.

Right now, let's take the time to point out one of the strongest arguments for this concept, which is that it *explains and predicts* essentially *everything* about humor, including the findings of the previous theories. Some noticed that there must be a "surprise" or an "expectation" to be violated. This is explained clearly and logically here, by the idea that laughter functions to lower people to a new status as they demonstrate ability below what others thought. "Absurdity" makes something funny because it's a *highly-noticeable* error. The need for validity, as said, shows why "cheesy" and "corny" jokes aren't funny. Furthermore, since this is meant to function without violence, it follows *naturally* that we'd *smile* when we laughed, to indicate no threat to each other, and feel *pleasure* while we do so, to further suppress any anger.

Furthermore, since a laugh is a signal to others, we laugh as an *instant reflex*, allowing others to see what's happened and thus also observe whatever's changing the status quo in our group, especially pre-language. We often can't explain why we laugh because, due to the benefits of laughing instantaneously, it triggers off of instinctive recognition at the precise moment, where we don't always have the words to explain it. This also easily shows how laughter can exist in various forms in certain other social animals who don't have language.

Let's note also that this theory can clearly explain the idea of "sense of humor." Which consists of what someone personally finds to be high-quality and low-quality (see the previous example about certain gay jokes, or things like English humor which depend on high expectations of people with certain accents and postures, which aren't shared outside the country), the types of errors they can notice (such as their knowledge base for "inside jokes," as well as someone's *wittiness* consisting of their ability to detect subtle errors or signs of low-quality), what they personally find believable (children, for example, enjoy cartoons and other types of humor which adults don't find nearly as funny), and what causes someone personally to feel anxiety (it's been said before that rich or powerful people tend to have loud, boisterous laughs, which this theory predicts *since they feel less anxiety or threat than the average person*).

Okay. If this is true, why hasn't it been found before?

Good question. Perhaps, like a lot of ideas, this builds upon certain others, that must be known first, and which the internet has made publicly accessible. Particularly evolution, which means that Aristotle, Plato, and basically anyone who lived before 1859 had major gaps in their path toward finding this. In addition, this relies heavily on the idea that people developed in small social communities, a concept I call "the Village Brain," which also can solve at least one other mystery of human instinct. Here it may not be *essential*, but understanding it certainly helps.

Furthermore, there's a tension in the brain's measurement between *noticeability* and *validity*. An error or sign of unexpectedly low-quality has to be close enough to reality (or a misplacement close enough to being correct) for the brain to judge that someone has genuinely made a mistake, but it must also be wrong enough to be *noticeable*. This is why a lot of absurd things or jokes are too corny/invalid to be funny, and a lot of more subtle jokes must expose a noticeable enough mistake for people to "get it." The challenge of striking this balance is a huge part of why it's difficult to write a good joke.

On top of that, this fairly simple mechanism of humor actually expresses itself in many distinct ways (like how the simple mechanisms of variation and selection express themselves in many ways in evolution), which can make it hard to recognize the common source. For example, there are actually at least *four distinct types* of humorous laugh. Laughter at a known third person's low-quality, which is the most common, but also first-person, at one's own errors (like when you realize you've been looking for your hat while you're already wearing it), as well as second-person laughter, such as laughing at someone's failed attempt to tell you a joke. Lastly, there's laughter at an *unknown* third person, when you discover an error by someone unseen, which gets compared to your expectation of the *average person* around you, such as might occur when you come across a car parked with one wheel up on the curb.

Alright, let's apply this to some common examples.

1) Pranks. The basic point of pranks is to fool the victim into reacting to something they shouldn't, thus allowing observers to laugh at them for their error in judgement. Thus, the most humorous pranks put the victims into false and highly outlandish situations, with the goal being to get them to show that they believe what's happening and are frightened, angered or otherwise effected by it. Note that the situation can be as crazy as possible, but for laughter to trigger, the victim's *reaction* is what must feel valid.

It should probably also be said that if the prank causes anxiety, like if the observers are worried that the victim is being overly traumatized, or that the victim may get violent, then it will also not be funny. Also similarly, if a "prank" involves a situation that someone *should* react to, by being a real threat or bother to them, then it won't generate laughter (unless there is some other reason it's funny, like as said, that the prank is so bad you laugh at the pranksters instead of the victim, which may help demonstrate why laughter can be complex).

2) Farts. There are several reasons a fart can be funny. Some of which are when the fart shows a person's inability to conform to a certain social environment despite their best efforts, or when the fart demonstrates that a group of people attempting to be cultured and controlled are nonetheless human, in a manner that is distinct and highly-noticeable. For another example, if an infant is struggling or seems to be in pain, then unleashes a tiny fart and is immediately happy, it can indicate that our expectations of the infant having a potentially huge

problem were unfounded and make us laugh at ourselves. Speaking of infants...

3) Peek-a-boo. This example is very relevant because studies have indicated that babies tend not to laugh until they reach about 4 months of age. This theory predicts exactly this, because the brain *must* have formed some expectations before those expectations can be violated (though before that, they may perhaps still be ticklish, see below). Peek-a-boo likely springs from some of the most basic expectations that the brain forms about the world, which is that objects stay where they are and don't disappear. When a person makes their face "disappear" by covering it and then uncovers it, appearing again, the infant's brain would logically detect instinctively that the person is doing something they shouldn't be able to do, and they thus laugh at either the person or their own expectation being wrong (instinctively of course).

4) Tickling. This is blank in our chart, because I don't think tickling laughter is humorous. It may be a reflexive diaphragm-spasm for other reasons. But it's still under consideration.

5) Puns. These trigger one of our most basic laugh instincts, which is recognizing low quality by misplacement (slipping is a classic physical failure, misplacement is mental failure). A funny pun puts a thing in a noticeably wrong place, but where it still has things in common with its surroundings, triggering the brain to recognize what in the village days was a likely genuine error by someone else. The funniest puns *layer* this misplacement with other things, like fitting insulting terms in place of normal ones. Note again though that we often laugh at puns because they're *bad*, with our laughter caused by the person's failed attempt at humor.

6) Jokes. Obviously they function in many ways. Usually setting up puns, but also often as a story ending with a *sharp* low-quality demonstration. Note that the listener's brain *itself* must notice the thing to laugh, *which is why*, "if you have to explain the joke, it's not funny."

7) Leeroy Jenkins. A more modern example that demonstrates several aspects of the theory, including the powerful effect of layering, where multiple quality gaps can be noticed. For one, "Leeroy" himself screams his name with believable conviction, making him seem more foolish/low-quality for being so unaware of how ill-fated his actions were. Plus he has a deep voice, which is typically associated with maturity and strength, creating a higher expectation of quality that's also violated by his moronic charge. Furthermore, he leads his entire group (which moments before was precisely calculating their probability of success, a cause to expect higher quality *from them*) to follow foolishly and die with him. At the end, we hear the other players basically sigh at Leeroy, and he replies "at least I have chicken," making it clear that no one is really angry, insuring low anxiety and creating huge laughter in a lot of viewers. Note that, similar to what we've said before, the stereotyping associated with the name and chicken comment wouldn't be funny to many who watched, but the other factors clearly were.

Hopefully, these demonstrate some of the many subtle ways that our humor instinct functions. Though ultimately, within this theory, its cause and purpose turn out to be quite simple. Also, even if this idea is not correct, I hope there is enough useful information and ideas within this paper to give us a new outlook and some new insights in the field of humor.

If you enjoyed this paper, [read part II](#), which goes into much more detail. If you're interested in more theories, subscribe to [youtube.com/StoryBrain](https://www.youtube.com/StoryBrain), or follow twitter.com/StoryBrain1. Thanks.