

The Cartoon Laws of Physics

(Originally "O'Donnell's Laws of Cartoon Motion", Esquire, 6/80 ... often quoted from "IEEE Institute", 10/94; V.18 #7 p.12. Anonymous comments on the main laws that did not appear in the original are marked with parenthesis.)

I: Any body suspended in space will remain in space until made aware of its situation.
Daffy Duck steps off a cliff, expecting further pastureland. He loiters in midair, soliloquizing flippantly, until he chances to look down. At this point, the familiar principle of 32 feet per second per second takes over.

(Exception: This does not apply to cool characters who've never studied law.)

(Appendum: Any species capable of flight, upon distraction of vertigo, will lose ability of flight. Conversely, any two feathers held in each hand and waved will (temporarily) give flight to any character that does so.)

II: Any body in motion will tend to remain in motion until solid matter intervenes suddenly.

Whether shot from a cannon or in hot pursuit on foot, cartoon characters are so absolute in their momentum that only a telephone pole or an outsize boulder retards their forward motion absolutely. Sir Isaac Newton called this sudden termination of motion the stooge's surcease.

III: Any body passing through solid matter will leave a perforation conforming to its perimeter.

Also called the silhouette of passage, this phenomenon is the speciality of victims of directed-pressure explosions and of reckless cowards who are so eager to escape that they exit directly through the wall of a house, leaving a cookie-cutout-perfect hole. The threat of skunks or matrimony often catalyzes this reaction.

IV: The time required for an object to fall twenty stories is greater than or equal to the time it takes for whoever knocked it off the ledge to spiral down twenty flights to attempt to capture it unbroken.

Such an object is inevitably priceless, the attempt to capture it inevitably unsuccessful.

V: All principles of gravity are negated by fear.

Psychic forces are sufficient in most bodies for a shock to propel them directly away from the earth's surface. A spooky noise or an adversary's signature sound will induce motion upward, usually to the cradle of a chandelier, a treetop, or the crest of a flagpole. The feet of a character who is running or the wheels of a speeding auto need never touch the ground, especially when in flight.

VI: As speed increases, objects can be in several places at once.

This is particularly true of tooth-and-claw fights, in which a character's head may be glimpsed emerging from the cloud of altercation at several places simultaneously. This effect is common as well among bodies that are spinning or being throttled.

A 'wacky' character has the option of self-replication only at manic high speeds and may ricochet off walls to achieve the velocity required.

VII: Certain bodies can pass through solid walls painted to resemble tunnel entrances; others cannot.

This trompe l'oeil inconsistency has baffled generations, but at least it is known that whoever paints an entrance on a wall's surface to trick an opponent will be unable to pursue him into this theoretical space.

The painter is flattened against the wall when he attempts to follow into the painting. This is ultimately a problem of art, not of science.

(Corollary: Portable holes work.)

VIII: Any violent rearrangement of feline matter is impermanent.

Cartoon cats possess even more deaths than the traditional nine lives might comfortably afford. They can be decimated, spliced, splayed, accordion-pleated, spindled, or disassembled, but they cannot be destroyed. After a few moments of blinking self pity, they reinflate, elongate, snap back, or solidify.

Corollary: A cat will assume the shape of its container.

(Corollary 2: Cartoons cats have the uncanny ability to emit piano sounds when their teeth are transformed into piano keys after having a piano dropped on them.)

IX: Everything falls faster than an anvil.

Examples too numerous to mention from the Roadrunner cartoons.

X: For every vengeance there is an equal and opposite revengeance.

This is the one law of animated cartoon motion that also applies to the physical world at large. For that reason, we need the relief of watching it happen to a duck instead.