From Stephen Millhauser’s short story “Cat ’n’ Mouse,” published in the New Yorker in 2004:

The cat is chasing the mouse through the kitchen: between the blue chair legs, over the tabletop with its red-and-white checkered tablecloth that is already sliding in great waves, past the sugar bowl falling to the left and the cream jug falling to the right, over the blue chair back, down the chair legs, across the waxed and butter-yellow floor. The cat and the mouse lean backward and try to stop on the slippery wax, which shows their flawless reflections. Sparks shoot from their heels, but it’s much too late: the big door looms. The mouse crashes through, leaving a mouse-shaped hole. The cat crashes through, replacing the mouse-shaped hole with a larger, cat-shaped hole.¹

Alain Robbe-Grillet meets Tom and Jerry. Millhauser meticulously maps the illogics of a typical funny animal cartoon, producing a calm, dispassionate appraisal of what is usually experienced as seven minutes of frenetic anarchy. The brilliance of the piece lies in its lack of distortion, its accuracy in detailing the causal chains that constitute the gags in a typical chase cartoon. Millhauser’s cool, detached prose also has the salutary effect in pointing out just how strange those cartoons actually were. Does the surprise lie in Millhauser’s act of making them strange, or is it stranger that these cartoons didn’t seem all that strange in the first place?

Anything can happen in a cartoon, as cartoon characters frequently remind us as they blithely ignore the fourth wall and a rather significant ontological gap to address us directly (as, for example, Sylvester the Cat does in 1945’s Peck Up Your Troubles). But Hollywood cartoons do not give
us an entirely disordered universe of chaos and entropy. They give us a world that is ordered, but ordered differently: hence, *cartoon physics*. The term, though not the concept, was introduced in an *Esquire* magazine article in 1980, which formalized a series of laws that would be recognized and accepted by anyone who’d ever spent their formative years watching cartoons. Further amendments have been added along the way, aided by the crowdsourcing made possible by the Internet (not to mention fan cultures: there are laws of cartoon physics that are specific to manga, for example). Some examples, many of which are exemplified by the scenes described by Millhauser:

- Any body suspended in space will remain in space until made aware of its situation.
- Any body in motion will tend to remain in motion until solid matter intervenes suddenly.
- Any body passing through solid matter will leave a perforation conforming to its perimeter.
- Certain bodies can pass through solid walls painted to resemble tunnel entrances; others cannot.
- Any violent rearrangement of feline matter is impermanent.
- A cat will assume the shape of its container.

There is also something that has come to be called “hammerspace,” which is the realm behind a character’s back from which any object (often an oversized hammer) can be pulled.

Cartoon physics may have its genesis in the animation principle of “squash and stretch”—a phenomenon at least as old as phanakistoscopes. A bouncing ball will squash along the vertical axis and stretch along the horizontal. Overall mass is preserved, and movement can be rendered more realistically and with more fluidity. But this realist principle, exaggerated, produced a comedic effect, and voilà, the Hollywood cartoon was born. Winsor McCay put two of his characters from *Little Nemo in Slumberland* through their squashing and stretching paces in his first animated film, produced in 1911.

So cartoon physics has been with us for nearly as long as cartoons have existed, but it becomes important to write about now because its alternative universe of unnatural laws is threatened by the encroachments of the physics of the real world into the realm of animation in the digital age, a shift I’ll address toward the end of this chapter.
Cartoon Physics and Cartoon Bodies

There is something uncanny going on in Millhauser’s story: a part of our childhood experience is being returned to us in a way that makes the cartoon’s homey familiarity most unhomy. It’s a bit disturbing. It’s also hilarious, and reminiscent, in a way, of that other act of cartoonish estrangement—the opening of Robert Zemeckis’s *Who Framed Roger Rabbit* (1988). Recall (for I can’t imagine that anyone reading this volume hasn’t seen it) that the film begins with a Baby Herman and Roger Rabbit cartoon, replete with flying knives, preternaturally slippery soap, eyeballs popping from heads, and all the rest, until a director’s yell of “cut!” reveals to us that these actions were actually happening in real space and time, performed by a cast of “Toons” who coexist, uncomfortably, with humans and in human space. Both Millhauser’s story and Zemeckis’s film return us to the cartoons of our childhood, their strangeness newly highlighted for our contemplation.

*Who Framed Roger Rabbit* thematizes what usually goes unremarked on within the works themselves, which is that the diegesis of the Hollywood cartoon is governed by its own set of physical laws, a new set of restrictions that operate in the service of humor. When the private detective Eddie Valiant tries to saw off the handcuffs that bind him to Roger Rabbit, Roger easily slips out of his cuff to help steady things. A predictable (and I mean that in a good way) double take ensues: “Do you mean to tell me you could’ve taken your hand out of that cuff at any time?” To which Roger replies, “Not at any time! *Only* when it was funny!”

There are a few laws that I want to add—fondly remembered tropes from my childhood, adolescent, and adult viewing experience(s):

- Pepper will *always* make one sneeze.
- Billy goats eat anything and have a special fondness for tin cans.
- Eyeballs are detachable.
- Heads are empty, and smaller creatures can run around inside of them.
- Any explosion will turn a face into an African American caricature.

All of these perhaps belong more properly to the realm of what could be called cartoon *biology*, but, when you get right down to it, all of cartoon physics is ultimately about the body. The laws propose an alternative set of means by which bodies navigate space: momentum trumps inertia, gravity is a sometime thing, solid matter often isn’t. And cartoon bodies are possessed of a nearly infinite pliability, which allows them to...
weather the vicissitudes of cartoon physics (this idea of cartoon charac-
ters as differently, miraculously, abled is wonderfully articulated by *Who Framed Roger Rabbit*).

If there is a privileged body within the universe governed by cartoon physics, it undoubtedly belongs to Goofy. Indeterminate biology (what kind of an animal is Goofy?) has yielded an infinitely pliable body that seems constantly subject to operations of physical law, both actual and cartoony. He becomes the exemplar of the industrial body that David Kunzle has called “machined almost beyond recognition.”\(^2\) Squashed and stretched by gymnastic equipment, or by the act of pitching a baseball (an act that stretches his body nearly to home plate),\(^3\) Goofy demonstrates that what is really at work in the world of cartoon physics is a reimagining of the body and its relation to the world. If my work has centered on such reimaginings (cyberspace, Jerry Lewis movies— *The Nutty Professor* even features another battle with gymnastics equip-
ment—Winsor McCay comics, morphing), then it should be said that cartoon physics is the ur-phenomenon that undergirds them all.

But the Disney sensibility of the 1940s—Goofy’s heyday—was a far cry from the animistic wonderland that Sergei Eisenstein celebrated in the earliest Mickey Mouse cartoons. Cartoon physics cannot be allowed free reign in Disney’s cartooniverse, and so the laws of physical reality are gently teased rather than mercilessly mocked or overturned. Tom and Jerry cartoons, produced for MGM by William Hanna and Joseph Barbera, blend some of the realism of Disney’s technique with a healthy indulgence in the principles of cartoon physics. The world depicted is appealingly solid, making the transgressions of physical law that much more . . . I can’t decide whether to write *profound* or *funny*. The suburban decor of the house in which Tom and Jerry dwell and do battle provides an important quotidian backdrop. That bourgeois domesticity (Millhauser is right about the gleaming linoleum floors and polished sur-
faces) emphasizes the uncanniness of the goings-on—an effect already partly achieved through defamiliarizing perspectives (mouse-eye views from floorboard level or magisterial gazes from atop grandfather clocks) (see figure 17.1).\(^4\)

Cartoon physics is fundamental to the world of Tom and Jerry and in-
forms what happens to both cat and mouse in equal measures. An undu-
lating tablecloth will carry a luscious-looking sundae directly to Jerry’s mouth without spilling a drop. Tom’s eyebrows, pupils, and the whites of his eyes will pop from his head and float in midair.\(^5\) But the Road-
runner series presents something quite different, and we should pause
FIGURE 17.1 Bourgeois estrangement.
to acknowledge the tragic figure of Wile E. Coyote, who always gets the lit end of the dynamite stick in his struggle to catch that nameless roadrunner. Wile E. has a particularly tortured relation to physics, which begins with his unshakeable faith in its predictability. His is an eminently rational mind, and he knows it. In his one guest-starring role in a Bugs Bunny cartoon, Operation Rabbit (1952), he announces himself with his card, which reads, “Wile E. Coyote. Genius.” Declaring his intention to eat Bugs, he cautions, “Now don’t try to get away! I am more muscular, more cunning, faster and larger than you are—aaaaand, I’m a genius!”

A bit later in the proceedings he considers a promotion. “Wile E. Coyote—SUPER genius! I like the way that rolls out. Wile E. Coyote, Super-Genius.” (He then proceeds to be blown to smithereens.) His plans are meticulous, often carefully mapped and blueprinted, and their reliance on basic principles of physics makes their success seem inevitable. Attach a boxing glove to a massive rock with a giant spring. Lock in place. Release spring. Aaaaaaand, in contravention of all the laws governing the properties of mass, the glove remains in place as the rock springs backward, right where a certain coyote has been confidently lurking (figure 17.2). (The coyote’s faith in causal relations and step-by-step planning lends itself to the kind of precise descriptive mapping that marked Millhauser’s narrative voice in “Cat ’n’ Mouse.”)

Physics is not his only betrayer, however. In advance of Duck Amuck, by the same writer and director team, the very makers of the cartoon itself seem allied against him. Screen space is made complicit with the slipperiness of cartoon physics. In the first Roadrunner cartoon, Fast and Furry-ous (1949), Wile E. pulls the old “fake tunnel” trick. Painting a deceptive white line up to a cliff face, he then paints a perfect perspective painting of a long tunnel, the white line continuing to its ultimate vanishing point, a hint of blue sky marking the tunnel’s end in the seeming distance. The camera is placed behind him, giving us a lovely view of what the Roadrunner will see as he approaches, and it’s obvious that he’ll be fooled. The coyote clears out of sight, taking his painting paraphernalia with him, and an offscreen “beep beep” denotes the bird’s approach. The shot continues as the Roadrunner sails onscreen from behind the camera and blithely continues on into the tunnel’s simulacral space. The coyote has done his job too well. Cut to a lateral view of the coyote, his face stretched in dismay and disbelief. But he is nothing if not adaptable. Emerging with a look of fierce determination, he rears back and launches himself in pursuit, only to smash up against that all-too-physical rock wall (as it sometimes says on Wile E. Coyote’s own
blueprints, “Ha ha!”). But the coyote’s failure has been anticipated, indeed, preordained, by the cut from an axial to a lateral view that demolishes the trompe l’oeil effect, the image’s two-dimensionality now evident to us all (figure 17.3). Similarly, in Beep Beep (1952), Wile E. lays a short stretch of track laterally across the highway to fake a railroad crossing, but then makes the mistake of camouflaging both ends with some shrubbery to create the illusion of the tracks extending, not just beyond the road, but beyond the boundaries of the screen. Cue the train.

**Topsy-Turvydom Redux**

If I were the kind of person who did research, I’d be interested in learning how frequently kids tried to mimic the behavior that they witnessed in cartoons. Apparently television’s Superman, George Reeve, became distraught over stories of children trying to replicate Superman’s ability to fly out of windows. But I’ve yet to hear about kids trying to blow up roadrunners with dynamite (much less with any of the more esoteric products sold by the Acme Company). I suspect that children understand that they are watching something from a world apart, something not mimetic of reality, and therefore not something that they would
Figure 17.3 Betrayed by screen space.
seek to mimic in turn. Cowboys and Indians was a popular game. Playing superheroes—of course! But Roadrunner and Coyote, Tom and Jerry, Bugs and Elmer—not so much.

But I wonder what, more specifically, children “get” from cartoon physics. It’s tempting to think that it speaks to an anxiety over bodily development and control (what doesn’t?), but let’s remember that kids think next to nothing of falling—skinned knees and elbows are the body art of childhood. Perhaps cartoon physics speaks to a utopian condition of bodily invulnerability then, and all the coyotes, cats, and ducks represent more of an attempt to hold on to (for kids) or return to (for adults) the body that could take a lickin’ and keep on tickin’. While I think there’s something to this, I’m more tempted to find the utopianism of cartoon physics in the state of licensed topsy-turvydom that it instantiates. The cartoon represents an other space—the screen already separates it from our reality, and its animated status positions it as “other” to the more dominant live-action cinema—in which other rules apply, in which the seemingly immutable laws of the here and now are no longer so determinate. This shares many of the conditions recognized as endemic to the world of play, an activity that often takes place in a magic circle with its own rules and codes of behavior.6

In The Poetics of Slumberland, I argue that cartoon physics speaks to the key ontological difference between live-action film and animation: a shot in the former is filmed in real time, with the camera recording the movement that occurs before it, while in the latter, the camera only records a series of still images, with the suppression of the real-time movement of switching images as the caesura on which the illusion depends.7 Projecting live-action cinema reconstitutes the movement that occurred in profilmic space, while projecting filmed animation generates an illusion of movement where there was none. This inversion of the filmic process has, I think, its sly analogue in cartoon physics. If the production of animation is a topsy-turvy version of the production of live-action cinema, then the topsy-turvydom of cartoon physics is its onscreen equivalent, a visible sign of its otherness. And if the animated beings onscreen are marked by their disobedience and unruliness—early cartoon characters seem to exist in a continuous state of rebellion against their animator creators—then cartoon physics maps that disobedience onto the natural world itself.

Millhauser takes up this condition in another story that I’ve cited elsewhere in my writing, this one a fictionalized version of Winsor McCay’s forays into animation: in the story, the artist, forced to aban-
don his innovative comic strips in favor of meticulously rendered editorial cartoons, finds increasing solace in his nocturnal production of drawings for elaborate animated films. I can’t not cite this passage again:

The animated cartoon was nothing but the poetry of the impossible—thither lay its exhilaration and its secret melancholy. For this willful violation of the actual, while it was an intoxicating release from the constriction of things, was at the same time nothing but a delusion, an attempt to outwit mortality. As such it was doomed to failure. And yet it was desperately important to smash through the constriction of the actual, to unhinge the universe and let the impossible stream in, because otherwise—well, otherwise the world was nothing but an editorial cartoon.8

There is a melancholic dimension, but presumably more pronounced for adults. Children, I’d like to think, are simply taking it for granted that there is a realm where all kinds of punishments can be inflicted without consequence. A few bandages, some circling stars, then on to the next adventure, fully restored. Or is Millhauser more correct, and do children see in cartoons a condition to which they know they cannot aspire, and so do not?

I have written about the licensed topsy-turvydom represented by special effects and their destabilizing of perceptual norms, a notion borrowed from Terry Castle’s writing on the function of masquerade in the eighteenth-century British novel. These presented “a world of endless, enchanting metamorphosis” and introduced a touch of carnival to a culture sorely in need of one.9 Castle argues, “In a rigidly taxonomic, conceptually polarized society, it [masquerade] opened up a temporary space of transformation, mutability, and fluidity. It embodied, one might say, a gratifying fantasy of change in a world that sanctioned few changes.”10 This seems almost ridiculously appropriate to the world of animation, and more specifically to the world of the Hollywood cartoon with its re-formations, or overturnings, of physical law.

I had originally pressed this into the service of theorizing how the spectacular elements of cinema might constitute a resistance to narrative’s authority—narrative, with its causal logics, containments, and more or less tidy closures. In Hollywood cartoons, however, the narrative is hardly the thing; they revolve instead around a set of situations that will be repeated throughout the series.11 Settings might change (Yosemite Sam might be a pirate instead of an outlaw), variations might be rung (Bugs and Elmer might be singing opera), but the themes retain
their familiarity. Even the comparatively reflexive *Duck Amuck* (1953) can be understood as belonging to the genre of the Daffy Duck cartoon, in which Daffy will try and fail to play his assigned role (western gunfighter, space explorer, detective, Robin Hood). When Michael Maltese and Chuck Jones tried to repeat the formula of *Duck Amuck* with Bugs Bunny now the victim rather than the tormenting animator in *Rabbit Rampage* (1955), the results fell flat; the formula did not work for the genre of the Bugs Bunny cartoon. And whatever stability is represented by the cartoon's finale, the audience knows that the next cartoon will simply reanimate the same conflict, with nothing changed, nothing learned, nothing gained, and nothing lost.

So the topsy-turvydom of cartoon physics represents no threat to narrative power, since the narrative really serves to frame a set of gags that may or may not be specific to this particular variant. No, what is being challenged by cartoon physics, as Millhauser demonstrates in both of the writings cited here, is the logic of the cosmos itself. Eisenstein's celebration of early Disney concentrated on the “rejection of once-and-forever allotted form, freedom from ossification, the ability to dynamically assume any form,” and this was a freedom, he hypothesized, particularly attractive to those laboring in the factories of America. He further explored the animistic attractions of the cartoon, which aligned it with other phenomena, such as children's literature. Everything in the cartoon potentially possesses a life force: inanimate objects possess life, while flowers and trees and cats and mice take on anthropomorphic qualities. Both the cartoon's plasmatic possibilities and its animistic tendencies are reflected in cartoon physics, despite their more rule-bound nature: in a world where a cat will assume the shape of its container, there is clearly a rejection of allotted form, while the capriciousness of the very laws of nature gives those laws something of a life force of their own, which some characters and not others can harness to their own ends. The freedom claimed for the cartoon by Eisenstein here becomes a freedom from traditional causality, freedom from natural law, and freedom from consequence (punishment, death, skinned knees).

**The Cartoon Cat in the Machine**

If animation is newly popular, either through entirely animated films (*Ratatouille*) or through the incorporation of animated beings into real-world settings (*The Golden Compass*), or the incorporation of captured movement into animated forms (*King Kong*), it is specifically digital ani-
mation that dominates. While the occasional hand-animated films may appear from overseas or, even more rarely, from Hollywood (Fantastic Mr. Fox [2009], Coraline [2009]), digital technology has been largely responsible for animation’s renaissance. And digital animation has, historically, had a different set of concerns—it’s task defined, more often than not, by replicating (and perhaps tweaking) real-world physics.

What Paul Wells has called “realist animation,” animation that replicates the formal and stylistic structures of live-action film, has become so much the norm that it frequently goes unremarked. And digital animation extends beyond the cinema—much of the software for rendering physics comes from the world of computer games. Playability, rather than comedy, is the goal, and the immersive experience of console gaming is all too easily interrupted when bodies in space fail to move properly.

The intersection of modeled physics and computer gaming stretches all the way back to the medium’s beginnings, with Spacewar (1962). Using crude vector graphics, two players fire at one another’s spaceships, but a central body exerts a gravitational pull that affects the ballistics and threatens the ships themselves. The first successful “home” video game was Pong (1975), which was nothing more than angles and trajectories of movement. The subsequent history of console gaming is largely the history of simulation, and as Microsoft and Sony competed for a lucrative market, their machines became increasingly powerful, and this power was dedicated to the modeling of physics in real time.

Books on game design stress physics as a crucial component of a game’s realism, and entire books are dedicated to game physics, instructing designers in the modeling of not only gravity and momentum but also light refraction, air and water resistance, friction, collisions, and wave behaviors. To generate more realistically moving bodies for procedural (real-time) animations in games, bodies were composed of rigid body parts connected with virtual joints whose articulations were similarly constrained to those in human bodies. They could thus fall believably, and improvements in programming produced increasingly realistic simulations of human collapse. Real-time animation is thus overwhelmingly placed in the service of the real—never mind whether the world created is historical, alien, or fantastic.

But these “ragdoll physics” simulations had their problems: if issues such as weight, flexibility, and mass weren’t properly factored in, bodies could bounce, flounce, and jounce in exaggerated and painfully humorous ways. Machinima examples abound on YouTube of computer-animated characters sailing through the air, bouncing off walls, or slid-
ing head first for the length of city blocks, always to end up unscathed and unbruised, in a heap of articulated limbs, like the ragdolls that gave the phenomenon its name. Ragdoll physics, Gamespot’s Vocabularium tells us, became associated with “wild flailing and exaggerated reactions to physical forces,” and its accompanying video features actual people mimicking those loose-limbed, bobble-headed pratfalls.\textsuperscript{15} What was thus originally a programming glitch, a pothole on the road to realism, became, on the part of gamers, a kind of \textit{détourned} embrace of the resulting cartooniness.

Gamers further exploit programming glitches when performing speedruns—zipping through the levels of a game in the minimum possible time. This mode of play often depends on working against the normal sequence of events in the game (“sequence breaking”) or exploiting glitches in the game engine that may involve using a weapon to propel yourself through space in unexpected ways, or that may yield, for example, a suddenly permeable wall under certain, accidentally encountered, conditions (“glitch usage”). It would be nice if any body passing through the glitchy wall would leave a perforation conforming to its perimeter, but you can’t have everything.

Speedruns are meticulously planned exhibitions of hacker skill, and they are based on a combination of accidentally discovered phenomena and meticulous analyses of the physics of the game engine. And the possibilities for cartoony fun don’t stop there. Gamers able to manipulate the game’s programming code can modify variables such as gravity or attraction, exaggerating effects still further: manipulating the “PushActorAway” script, for example, can send adversaries flying into walls with the lightest tap. Hilarity ensues. Thus, cartoon physics still lurks within the more realistic physics of game engines, as its uncanny, playful double: the cartoon cat in the machine. It could even be argued that real physics is actually a mere subset of cartoon physics in the world of gaming—a specific set of computational restrictions imposed on the vast variability of which the technology is capable. I find this somehow reassuring.

It does make one wonder what a game explicitly based on cartoon physics would be like. Would you choose your weapon with an eye toward what shape your adversary will be after the blow is struck? Would a change in your knowledge-state affect what happens to your body, as you discover that your avatar is actually poised high above an abyss that leads to an abrupt descent? After all, there actually is an equivalent to “hammerspace”—in some games you’re allowed to carry an unlimited number of weapons, with no consideration of their weight or bulk.
The software that generates the physics in console games has its analogs in the world of cinema. Here too the ability to convincingly animate a body moving through space depends on a consistent physics—objects and beings should behave in a way that makes sense. Even in the genre that most celebrates alternative kinds of bodies—the superhero film—physical laws must be respected, even as a few of them are being revised. As I argue in The Poetics of Slumberland, animation in the superhero film represents a kind of constrained plasmatic, one that speaks to the “freedom from allotted form” while unable to fully embrace it.

Perhaps the difficulty arises when cartoon characters or animated figures have to share screen space with live elements. With the signal exception of Who Framed Roger Rabbit, animated characters in these films can be seen to have left the world of pure animation, their special realm, to exist in a hybridized reality, and in that reality their playful, internally consistent physics are trumped by those of the real world. Even Jerry the Mouse, in his celebrated partnering with Gene Kelly in Anchors Aweigh (1945), loses much of his elasticity, his movements now tethered to those of the undeniably compelling but strictly physical body of Kelly. Similarly, Spider-Man is tethered to Peter Parker, with his frail aunt and unrewarding day job. The emergence of a physics more like the cartoonish becomes a more temporary thing that occurs at more or less predictable intervals when danger threatens. A significant exception to this is Brad Bird’s The Incredibles (2004), which pairs off interestingly with Who Framed Roger Rabbit. Here again there is the existence of differently abled bodies, superheroes now rather than Toons, and a profound suspicion and dis-ease surrounding them. But The Incredibles is entirely animated, and so it is free to celebrate those bodies in ways that elude most superhero films.

Strange as it sounds, speedruns and game modifications introduce something similar to a level of play to the act of gaming. The rules of the game are jettisoned in favor of something more improvisational and original—the whole point is to elude or elide the rules. And the re-emergence of play in the form of a return to cartoon physics makes me wonder whether there isn’t a deeper connection between them. Might the supersession of cartoon physics by the comparatively constrained plasmatics of CGI and game engines have its echo in another shift with significance to the world of children: the supersession of unregulated, “free” play by the hyperregulated world of contemporary childhood. Gabrielle Principe cites current neurological research and declares: “If parents and teachers wanted to design a way of life counter to the needs
of developing human brains, they’d invent something like modern childhood.”\(^{20}\) Scheduled play dates, “Mozart effects,” prekindergartens, after-school activities, team practices, music lessons, chess clubs, “teaching to the test,” abundant achievement awards—all of this mitigates against the improvisational, the playful, the exploratory, the imaginative.\(^{21}\)

Adults might decry the level of violence in your classic Tom and Jerry or Roadrunner cartoons—it’s difficult to make the case that explosion, electrocution, decapitation, defenestration, immolation, and all the rest are the kinds of things that kids \textit{should} be seeing. But this is to consider the content of these cartoons on only the most blatant narrative plane, which ignores the cartoonishness of it all, and which ignores the bodily imagination that exists around and through these “violent” displays. Here is the body deformed and reformed—elastic in every sense of the word, an alternative body that is itself the product of imaginative play. Wile E. Coyote and his brethren live, breathe, and blow up in that “magic circle” of play.\(^{22}\)

The advent of digital animation in Hollywood has yielded films of sometimes great beauty and humor, rich (paradoxically enough) in the textures of the world. But their great achievements can come at the expense of what truly characterized the Hollywood cartoon in its seven-minute heyday—its playful remaking of the world. Of course this tendency greatly predated Pixar—from the moment Disney turned its attention to the production of feature films, the realist aesthetic came to the fore. But \textit{Snow White and the Seven Dwarfs} had its Dopey, \textit{Pinocchio} its Gideon, \textit{Dumbo} its pink elephants on parade (not to mention its flying elephant)—physical laws and bodies were transcended \textit{somewhere}. Most of the press around Disney-Pixar’s \textit{Brave} (2012) focused on new computer algorithms that could effectively simulate the lead character’s unruly hair. Somehow that doesn’t seem enough (although, truth to tell, it’s pretty awesome hair). Meanwhile, in the real world, creative, unstructured, exploratory play has been supplanted by the deeply goal-oriented telos of computer gaming, which is more limiting even in its most “open world” iteration. I miss the impossible. With apologies to William Burroughs, it’s time to storm the reality studio—and unleash the cartoon cat.

\begin{notes}

1. Millhauser, “Cat ’n’ Mouse,” 175.
3. Oddly, the day I wrote this, the guest on National Public Radio’s \textit{Fresh Air} pro-
\end{notes}
gram was the major-league pitcher Bob Ojeda, who discussed the extraordinary amount of pain his noncartoon body experienced with each and every pitch.

4. Sometimes an African American woman intervenes in the chaos, her role provocatively ambiguous (hausfrau or maid?).

5. Both examples are from The Million Dollar Cat (1944).


11. There is some debate about this in film studies circles. Brian Henderson downplays the place of narrative in the Hollywood cartoon short, while Richard Neupert finds the shorts to have all the hallmarks of classical Hollywood narrative, albeit in condensed form. I have to side with Henderson—narrative elements are present, but they hardly represent the same kind of determinant structure as in feature films. I also can’t imagine the viewer of a Pepé Le Pew cartoon focusing on, say, issues of closure. For the Hollywood cartoon built around repeating characters, narrative provides an ersatz unity, one that, more than anything else, allows the cartoon to end in its allotted seven minutes. See Henderson, “Cartoon and Narrative in the Films of Frank Tashlin and Preston Sturges”; and Neupert, “We’re Happy When We’re Sad.”

12. Eisenstein, Eisenstein on Disney (1986), 21. I believe that all scholarly essays on animation are required to cite this work.


14. For a thoughtful history of this period, see Lowood, “Videogames in Computer Space.” Thanks to Henry for his assistance on this essay.


17. Jerry’s movements are clearly rotoscoped from the footage of Kelly, and so the sequence is actually a disguised version of Kelly partnering with himself.

18. As I’ve argued in The Poetics of Slumberland (203–4), the exception here is the origin sequence, when the body’s new abilities are still indeterminate and surprising.

19. To clarify: I’m not implying that something such as a speedrun is a real-time improvisation, but rather that it represents a kind of riff played against the “score” of the game world as its designers envisioned it.

20. Principe, Your Brain on Childhood, 17.

21. Henry Jenkins has addressed the relation between computer play and outdoor play in “‘Complete Freedom of Movement.’”