CLAY
ANIMATION

Michael Frierson
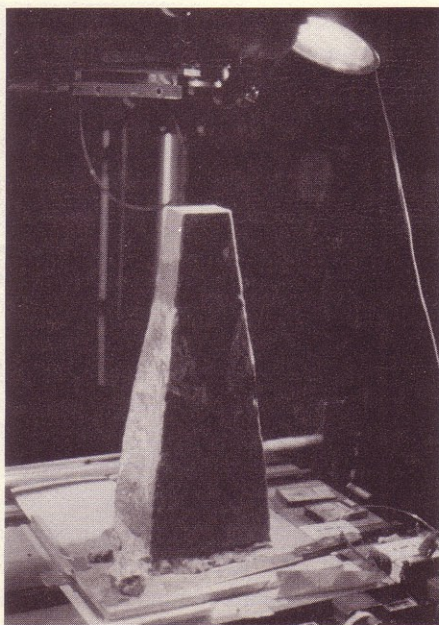
Clay Animation

Frierson

Figure 8.2 The basic principle of strata-cut animation: achieving motion by slicing blocks of clay with embedded imagery. The camera is mounted above the block. Photo courtesy of David Daniels.

cluded in a feature film that Zappa was planning. For the next six years, Bickford would work on a series of scenes for that evolving, ill-fated project before leaving Zappa to return to Seattle.

In retrospect, Bickford believes that his first task in Los Angeles should have been determining how this early material could be integrated into a coherent feature. But he did not worry much about the larger structure of the project at the time. Zappa was either touring or in the studio, so "there was no—almost zero—organization. And then there was less organization as the years passed. I should have been pushing for a single film, but Frank had his own ideas for films to make. He would come up with an idea, but there would never be any follow-up. I was trying to work on these films, but I made a lot of mistakes. I made a lot of figures that never got used, and that was time I should have spent animating. I got sidetracked a few times, probably a few times by him and mostly by myself" (Bickford interview).

Figure 8.3   David Daniels animating the metamorphosizing announcer's head for Honda's "Metamorphosis." The clay animation is matted into existing live action footage. Photo courtesy of David Daniels.

Council, Bickford was able to finish the film and return to a long-standing, evolving project called "Tales from the Green River."

Bickford's Grotesqueries: Contradicting the Norm

The work of Bruce Bickford has no real parallel in other three-dimensional forms of animation. The originality of his vision—what captured Frank Zappa's attention in the first place—is remarkable, as is his ability to animate that vision in a profusion of minutely detailed clay creatures and line drawings. By working small—entire sets are frequently no more than a clay space the size of a grapefruit—and by single-framing rather than double-framing, Bickford maintains a high level of technical control over his figures while exploiting the myriad surface imperfections that naturally arise in clay figures that small. Tactile detail and melting fluidity, coupled with the embedded iconography, make Bickford's clay arresting; it suspends the viewer in a kind of trance. Once engaged, you have to shake yourself free from a

Figure 8.4   Clay image from *Buzz Box*. Photo courtesy of David Daniels.

ting on a flatbed editor with the real Zappa sitting out of focus across the room; an animated editing glove climbing Bickford's leg. All this footage is clearly behind-the-scenes material for the documentary. When the animation is finally seen full-screen, unmediated by flatbed or video screen, it races through an iconography of "Castl Disco," reclining female figures who caress their own breasts, cars, and architectural spaces. A single face metamorphosizes into a multitiered architectural space with eleven portals, a balcony with a rail, and a miniature staircase with eight tiny steps. The camera dollies in through the railing, and a figure with a trident emerges from a clay wall. The figure transforms into a reclining female, and then into the huge head of a peccary that recedes and shrinks. Over all of this, Zappa weaves a nightmarish, childlike track of heavily synthesized toy pianos, munchkin voices, screams, cymbal crashes, and wheeling percussion as Bickford muses in voice-over: "Neither the torture chamber nor the disco knows about the existence of each other. But there is psychic contact between the two. The evil doings on the disco floor have their counterpart in the dungeon below. The more you get

Figure 8.5 Strata–cut eyes on the television viewer suffering "retina rot" in *Buzz Box*. Photo courtesy of David Daniels.

engrossed in modern-day . . . modern-day notions about talisman or any kind of psychic art, the manipulation of psychic objects, pretty soon you realize that anything goes. Some guy could pick up a piece of dog shit and say, 'Look, you hold this and the force field around this will flow into you.'"[5]

Bickford's rambling monologue, his eclectic progression from disco/torture chamber to the manipulation of psychic objects, is echoed in the desultory visual onslaught of fluid, metamorphosizing object/spaces, replete with the cracking, crumbling surfaces of his obsessively detailed miniatures. The visual assault of this segment is increased by intimate camera placement and simulated camera movement through these object/spaces. Frequently, the camera moves through the iris of a character's eye. As these spaces enlarge for the camera to "move through," they begin to take on sexual and symbolic overtones, in the manner of Georgia O'Keeffe's enlarged flower forms. Zappa's music and layering of the imagery merely multiplies the elements in Bickford's filmic irruption.

Figure 1.4   Joan Gratz animating her clay paintings. Photo courtesy of the author.

Clay painting can create complex color and give you the texture of brush strokes."[25] Gratz produced a seven-minute Academy Award–winning film entitled *Mona Lisa Descending a Staircase* (Pyramid, 1992) using the clay painting technique (see Figure 1.6). *Mona Lisa* metamorphosizes clay-painted versions of famous paintings to show how painting evolved over the centuries and uses the painterly quality of the technique "to communicate the emotional content of the works" (Gratz interview).

Finally, clay slicing has been used by David Daniels with great impact in segments from "Pee Wee's Playhouse" like "The Declaration of Independence" and "Christopher Columbus," in Peter Gabriel's video *Big Time* (1987), and in Daniels's short film *Buzz Box* (1986). Daniels calls his technique "strata-cut" and constructs long clay "loaves" with three-dimensional visuals embedded within them. Though this construction is laborious, at the production stage the loaf is simply cut into 1/8-inch slices with the camera following (tracking and following focus if shot upright on a set; lowering the camera and following focus if shot on a rostrum camera). Thus, strata-cut is an easy, mechanical process at the production stage. To hit key words or sounds in the track, Daniels simply marks the outside of the loaf

Figure 1.5   One of Joan Gratz's clay painted images from *Creation*. Courtesy of Will Vinton Productions Archive. © Will Vinton Productions, Inc. All rights reserved.

where those key images are embedded, noting where that cut must happen on the log sheet.

Strata-cut scenes have a remarkably fluid feeling, like an electrically vibrating, low-tech computer screen, a kind of flat metamorphosis in sliced rock that is melting down and moving away from the camera like a burning fuse. Daniels says that strata-cut "can fill the frame with continuous, seamless, changing images without the need for figuring out in-betweens. But simple images on the level of icons or logos or hieroglyphics work best because they can be easily read. The moving textures of a strata-cut image can be overpowering to a complex image."[26]

SUMMARY

For the clay animator, preproduction and production involve many of the same tasks of other animation techniques: the struggle with con-

Bickford calls his production company "Leisure Class Productions" because "that's my hope for the world, actually. That leisure could be a lifestyle that would replace competitiveness, the blind destructive competitiveness we have now. Not just for rich people that can afford leisure. Middle-class people should be doing something because they want to, [they should] quit trying to just make money and start working for the betterment of the world, even if it's just making entertainment, making movies" (Bickford interview).

DAVID DANIELS

David Daniels was born on 31 October 1958 in San Diego, the son of Morris Jetson Daniels, a sociologist at San Diego State University, and Doris Irene Taylor Daniels, an elementary school teacher who had also taught children's music and art. Daniels's mother encouraged creativity in the family, and at age five, with the help of his older sister Shelley, he built "Claytown," a miniature clay village set up in an area that their mother let them dedicate to playing with clay. Here, Daniels and his sister explored the medium over a period of years, building and destroying in their own clay kingdom, making clay modeling an everyday part of their childhood. Daniels says that "Shelley was really my first art teacher with Claytown. She was very precocious art-wise, very delicate. She had an excellent sculptural touch, and she taught me a lot when I was young."[6]

At age eight, Daniels recalls, his sister built a small but highly detailed birthday cake, alternating layers of clay "icing" and "fluff." "I'll never forget the spark of wonder it gave me," Daniels says, "when she cut the cake into little one-eighth-inch slices, and the layers buried within reappeared clear and crisp as ever. I knew intuitively that something magical could be done with this stuff." Though he had yet to film the process, Daniels had discovered the basic principle of strata-cut animation: achieving motion by slicing multicolored blocks of clay. "Strata-cut in its simplest form is this: if you take a cone and cut it away with the camera looking down from the top, a dot becomes a larger and larger circle," says the artist. "That is the first principle, and everything else follows from that. It's really the controlled use of shapes as opposed to animating shapes" (see Figure 8.2). Unaware of the wax-slicing experiments of Oskar Fischinger in the 1920s, or of Douglass Crockwell's *The Long Bodies* (1946–47), Daniels was ex-

cited by his discovery from the outset; he now says, "I'll never know why it took me 14 years to return to cutting clay" (Daniels interview). His sister Shelley is now working as a sculptor on Tim Burton's animated feature *Nightmare before Christmas* (1993).

In 1972, at age 14, Daniels animated in super-eight a clay short called *The Duchy of Frog,* which went on to win first prize in the Kodak Young Filmmakers' Festival in 1973. As a communications major at the University of California at San Diego, Daniels made experimental films like *Consume and Flesh* (1978), "a film which showed the onslaught and repetition of consumer images as a form of consumption itself" (Daniels interview). After dropping out for a year, Daniels graduated in the film program at San Francisco State in 1981, working in animation as well as experimental live action and documentary. In *Disco Proletariat* (1978), Daniels cut silent images of derelicts and "beautiful people" living flamboyant lifestyles to a structured, rhythmic beat. At each screening of the film, Daniels would tune in a live radio station to supply the disco track, making the film different for each viewing.

During the summer before graduate school, Daniels took a month to experiment with clay, working to come to "a structured understanding of time and motion and animation principles that could be achieved with a lump of clay cut sideways. I would try one approach and then another, to see what resulted. Going into Cal Arts, I had a clear understanding of the strata-cut technique, even though I hadn't animated anything with it" (Daniels interview). Pursuing a graduate degree in motion graphics, Daniels finally did return to clay slicing for a series of animation experiments that resulted in his master's thesis, *Buzz Box* (1986). The film took 14 months in 1983 and 1984 to animate and two years of raising money, editing, and scoring to bring to completion.

During the same period, Daniels worked on some horror films in Los Angeles, but not on anything "very steady, or very lucrative, or very interesting." When Daniels married Colombe Jodar, a Chicago-based flight attendant, in 1986, he could fly anywhere, so he "took a chance going to New York and finally crashed Broadcast Arts, the production company for the first season of 'Pee Wee's Playhouse.'" The company, owned by Steven Oakes and Peter Rosenthal, had just moved to New York and landed the "Playhouse" show. Working under tight deadlines, in crowded conditions, with low pay, Broadcast Arts was a springboard for hungry new artists fresh out of school.

Daniels recalls, "They gave me a job as a cameraman, based on *Buzz Box*, and eventually they ran out of animators. So in the first year I animated the bunny rabbits hopping on the hill for the opening of 'Pee Wee' and three episodes of the 'Penny Cartoon' series ['My Room,' 'Kids' Rights,' and 'Allen']." The style of clay relief animation in the "Penny Cartoons" was already fully developed by the English animators from Aardman Animations, so his input was limited. "They had their own style, and I just followed through and made my own little mark on it. I sort of Americanized it by adding speed blurs and more graphic zip. I tried to make it snappier, more kinetic" (Daniels interview).

When Paul "Pee Wee Herman" Reubens moved the show to Los Angeles for the second season, Daniels moved, too, and produced two remarkable strata-cut segments in 1987: "The Declaration of Independence" and "Christopher Columbus." Each segment was shot in six weeks with the help of only one production assistant; Daniels himself constructed the artwork, lighted the set, and programmed the motion control camera. He says, "I'll never do that again. It was completely insane. But I worked hard for them because they gave me a chance to do my own type of work. And it turns out that I was the only animator who worked on all five years of the show, mostly on things that didn't fit into any category—an animated Jhambi head, a clay Picasso painting that comes to life" (Daniels interview).

After "Pee Wee" ended, Daniels's next project was the Peter Gabriel video "Big Time" (1987), which includes strata-cut segments as well as a scene in which vegetation-covered hills grow faces and begin to sing. Daniels moved toward commercials with a series of spots for the California lottery (1990) and a commercial for Honda called "Metamorphosis" (1990), the first project that he worked on as an independent director represented by the Los Angeles–based production company Limelight. In the spot, an average-looking television announcer extols the virtues of Honda scooters. Suddenly, his head begins to transform into a series of hideous, colored faces that grow giant blue ears, bulging eyes, rainbow skin, and a huge gaping mouth. The transformation reverts to the normal announcer just as suddenly, and he apologizes to the audience, saying, "Sorry about that." The process involved shooting the clay faces on glass (see Figure 8.3), alternately front-lit and back-lit to produce a traveling matte, as well as rotoscoping to produce a three-dimensional match of the clay face to the announcer's face as it reverts to normal. As the clay face reverted

to the human face, Daniels used makeup and glass eyeballs to bring the model as close as possible to the human face.

David Daniels has continued to demonstrate his command of mainstream figurative techniques in several advertising projects, including a series of spots for the California lottery. His *bouncy and technically sophisticated style is* evident in spots like the lottery's "Pot 'o' Gold" (1990), in which a "loser" is smashed by a huge falling lottery *ticket*. The clay figure for this spot makes the term "loser" visually concrete with his potbelly, hawk-bill nose, and slick ducktail hairdo, disco dancing in a blue polyester, bell-bottomed leisure suit and platform shoes. As the giant ticket begins to fall, Daniels creates a Tex Avery–style "take" as the loser anticipates the crash, his mouth open like a cash register drawer and his eyes bulging out like traffic cones. But with all their polish and deft characterization, these mainstream works do not have the energy or visual punch of Daniels's more offbeat works.

In 1992 Daniels left Limelight and Los Angeles with Colombe and their newborn son Oliver to move to Portland, Oregon. The Will Vinton studio had agreed to represent Daniels as part of an overall company strategy to diversify the studio's look. In Portland, Daniels has worked on a number of projects using a mixture of three-dimensional and two-dimensional techniques, trying to enlarge the Vinton style beyond the mainstream clay animation that it has made so popular. Daniels says, "I'm trying to mix strata-cut with other forms of animation now—with photo cutouts, rotoscope, impressionism, computer texture mapping, and other techniques. I think it's healthier to use clay in combustion and contrast to other styles and looks. Within the same piece, each can be woven together to show how different the other is. Other animators seem to be going to this. Even figurative clay animators are going to foam bodies and clay heads so that the expressiveness of clay and its sculptability are in the areas where you need expression, and the sturdiness of foam in the body where you need stability" (Daniels interview). None of his current projects has involved strata-cut, but given the impact of the technique, Daniels will likely return to it in the future.

Strata-cut and the Films of David Daniels

Because strata-cut builds a patterned block that is sliced to reveal the cross-section, the technique calls to mind the ancient glassworking technique called *millefiori*, or "thousand flowers," by the Venetian

glass artists who revived it. Millefiori glass is made by arranging long, colored glass rods into patterns and heating them until they fuse together. The larger fused rod is then cut into slices, which can be reheated to produce surface decoration on glassware, or pressed into molds, which are heated to produce bowls, plates, and other moldware. The concept is also used in the manufacture of some hard candy and taffy.

Daniels describes the strata-cut aesthetic as kinetic yet highly efficient at the shooting stage:

The stratified layers of rock and sediment buried inside the earth itself—like swirls inside a marble cake—find expression and metaphor in this technique I invented called strata-cut. Just like a bulldozer is used to reveal the lines of color and shape beneath the surface of the planet, a knife is used to reveal the latent animation boiling inside a block of layered clay.

The magical thing about it is that time and space are woven together, each one affecting the other. And as you cut it up, you release the images embedded inside. They come sprawling out in a burst of kinetic energy. It's very primitive and very high-tech at the same time. There is a fluid metamorphosis that competes well with computer animation. It is a slow-moving molten medium that does some things like explosions and liquids very well.

Another advantage of strata-cut is that it can be very time-efficient for the number of "pixels per inch." Unlike 3-D or figurative animation, it may take a week or more to build an image or "block," but only a day or so to animate it. Because the animation is latent inside the block, at the shooting stage, it is a pretty fast process. In many instances, all you have to do is cut it away and follow focus.

Strata-cut can also fill the frame with continuous, seamless, changing images without the need for figuring out in-betweens. If you've ever had your mind severely bent from not sleeping for three days, your eyes begin to see everything "crawling" and "shimmering." This psychological effect is mimicked very well by strata-cut.[7]

Daniels's thesis film *Buzz Box* offers an early glimpse of some of his most compelling techniques, even though it is ultimately unsatisfying as a film (see Figure 8.4). A series of strata-cut and three-dimensional experiments structured around an imagined television "week" that assaults and ultimately destroys a viewer, *Buzz Box* opens with an intensity that leaves it no headroom; there is nothing left to build toward. The problem is accentuated by a sound track built from highly processed bits of sampled television audio. The most common effect used in the track is an extended reverb technique that calls to

mind top 40 radio, producing a series of diminishing echoes of the last line of a phrase: for example, "Buzz box . . . box . . . box . . . box." The effect is overused throughout, and the track as a whole is over-wrought, suffering from a sameness that de-energizes rather than energizes the work.

In the film, each day of the week brings a new show—"Retina Rot," "Scanline Fever," "Marilyn Stein," "Twilight Circus"—building to-ward Friday's "War Gazzam" and Saturday's "Re Runz." A parade of television iconography—the stand-up announcer, the newscaster with keyed graphic—as well as bits of text like "special," "mega," "ultra," "it's the new you!" and "news update," are animated using a range of techniques. At points in the film, Daniels demystifies strata-cut by changing the end-on, tight framing of a loaf of clay being sliced to a wider, high-angle shot. This framing shows a series of loaves—con-taining a car, an airplane, a tank—on a tabletop being cut, the cross-sections falling away like slices of bread. A loaf embedded with a mushroom cloud pattern flips and spins on the tabletop, "dealing out" slices of clay like playing cards. Later in the film, the slices are used like clay cutouts to form a variety of pop-art patterns, including faces beneath hair made of mushroom clouds or airplanes.

As the television viewer is reduced to a baggy-eyed insomniac who begins to disintegrate, his gaping mouth fills with the images pouring out of the screen (see Figure 8.5). In *Buzz Box*, Daniels explores how television's proliferation of consumer images, its fragmentation of news—"the machine-gun–like recitation of numerous unrelated items"[8]—and its immediacy—"the false sense of urgency . . . that tends to inflate, and subsequently deflate, the importance of all subject matter" (Schiller, 28)—ultimately leaves the television viewer con-fused and powerless. Daniels returns to a similar theme in a remark-able 30-second opening he created for the MTV show "Idiot Box" (1990). The opening climaxes as a television cracks open to reveal a hideous jack-in-the-box, whose face is animated with strata-cut to re-veal a tin can embedded inside his brain. The tin can opens, the brain emerges, and the corpse of the jack-in-the-box rocks on a spring in a tangle of wires as the television closes like a vault, revealing the title, "Idiot Box." Though the notion that television corrupts is not new, the theme is well expressed in those moments of *Buzz Box* when Daniels pushes the molten, kinetic quality of strata-cut to its limits, or when he uses it as a single element in a frenetic mélange like "Idiot Box."

Two strata-cut works made for "Pee Wee's Playhouse" demonstrate how the technique can be combined with traditional figurative clay

animation. In "Christopher Columbus," Daniels uses objects buried in a very large clay loaf to establish the setting for a dialogue scene between clay models of Pee Wee Herman and Columbus aboard one of the explorer's ships. As Pee Wee tells the story of the voyage in voice-over, the camera tracks with the slicing. The strata-cutting of the loaf reveals a rotating globe that falls away to reveal a series of three ships. Since Daniels sculpted the three ships into the clay loaf as curves—or more accurately, as a series of three curved "waves"—the ships "sail" right to left in succession as the loaf is cut away; these moves synchronize with Pee Wee's voice-over: ". . . the Nina, the Pinta, and the Santa Maria." Here, the strata-cut animation is used emblematically: visual interest centers on the transforming loaf—clearly seen here as a loaf on a tabletop covered with a map—and the revelation of images connected with Columbus's voyage. In this non-traditional "scene setting," the strata-cut process is foregrounded as the traveling camera follows the incremental cuts unearthing the embedded icons. This movement brings the audience into the next scene of Columbus and Pee Wee on a boat. Daniels deftly animates the rocking of the boat and some fairly close lip sync without trying for the precision of movement or smooth surfaces of Vinton-style animation. He also uses strata-cut slices laid on the end of Columbus's telescope to depict a reflection of the sun setting.

His "Declaration of Independence" segment is similar; strata-cut is used to reveal emblems that establish a scene. Here, the camera moves in as the loaf brings forth a patriot winking, hands waving flags, the barber-pole rotation of color stripes on the words "4th of July," and fireworks exploding as the exterior of Independence Hall "wipes" into view. To cover the transition from strata-cut exterior to a traditional, 3-D, clay animated interior of the hall, Daniels creates a long rectangular loaf—small on one end, larger on the other—that depicts a window springing up into view as it is sliced in increments. The film match wipes to an interior shot pulling away from a window as Benjamin Franklin and the founding fathers prepare to sign the Declaration of Independence. Asked for a quill, Pee Wee produces a ballpoint pen for the occasion and scolds John Hancock, "Think you wrote it big enough, John?" The film closes in a close-up, as "Your Pal Pee Wee" is inscribed on the document.

Daniels is at his best when he integrates the potential of strata-cut into simple narratives like the "Pee Wee" episodes. By contrast, when he uses the technique in *Buzz Box* to slice out clay cutouts to produce a proliferation of similar images, one wonders why color photocopies

would not work just as well. Strata-cut is more compelling when the image embedded within the loaf is uncovered, when the layers fall away and the transforming strata is revealed.

Integrated into the three-dimensional figurative clay that Daniels has already mastered, strata-cut adds variety to the clay world and a visual interest that blends effortlessly with traditional clay in the same way that clay painting does. Thinking of movement as a continuous solid form that embodies time is no doubt a difficult skill to master. Daniels's short career has demonstrated the basic methods and the potential of the technique. In an age hungry for unique imagery, strata-cut will remain a fruitful area for clay artists to explore for some time.

a good film, but the lip sync perhaps could be better if they resculpted the faces. The drawback to resculpting in clay is that it has a certain look, and it's a look that some people like and some people don't. But resculpting is always more articulate. It has more expression in the face, and that will always be clay's strength.

I think clay animation, as a pure art form in and of itself, will always be marginal—marginal in the sense that it will never be a mainstream, broad-based art form that everybody is doing, because it is so time-consuming. Clay is unique—it's like a special kind of rose, it's just not like every other variety.

But clay will be used as an element in computer modeling. Basically, you will build your character in clay, sculpt him into 20 or 30 or 40 different facial expressions, and digitize each one from all different angles. Then you have a digital map of facial movements that can be re-created and manipulated. They are already using clay in computer modeling. But the more easily computers can build a library repertoire of facial expressions, the more this [technique] will be used in character animation.

Computers will become sophisticated and cheap enough that you could use them in this hybrid form to make longer films. The [hybrid] process would ultimately give you more freedom and more longevity in manipulating the character. And the division of labor would finally be there for clay. You would have a lot of people employed as dimensional sculptors, but there would be fewer under-the-camera animators. The keys and in-betweens would be generated in the computer. This hybrid could be a more cost-effective way to animate in the long form, give a sense of dimensionality, and get around some of clay's limitations: the weight and the time you need to animate it.

But I think the real renaissance of three-dimensional clay will come when there is an available means of stereoscopic representation. The next generation of clay will blossom in 3-D, when there is a means to exploit the uniqueness of it, its dimensionality.[9]

CONCLUSION

The amount of clay animation produced in recent decades—the large output of the Vinton studio alone—has made figurative clay animation highly visible in the mass-media environment. And yet, over its entire history, clay animation has yet to produce an enduring, entertaining,

Joan Gratz, Independent Producer/Director and Clay Painter

Clay painting and [figurative] clay animation are two different things. I think of my technique as more like painting, and it certainly can be more abstract and more metaphorical. So there's a lot more to be done with it in the future. One would never assume that *painting* had been pushed as far as it can go, and I don't think I've pushed *clay painting* as far as it can go. What I want to do is continue to use this technique in less commercial, more personal ways. It seems appropriate for shorter works. I don't see myself or anyone else doing any feature films in [clay painting], because it is so labor-intensive.

On the other hand, traditional clay animation certainly can compete in the feature market. It can be done for about the same price as cel animation, or even a bit less. *The Adventures of Mark Twain* is not a good case to judge [the success of a clay feature] by, because they targeted it at a very young audience and it really fell down in terms of marketing. If you have an advertising budget and market it properly, [figurative] clay can be viable and competitive with cel.

Clay is becoming integrated with other techniques, and I think that's appropriate. The older Vinton studio films have a charm and unity that comes from the all-clay style. But now there's less focus on the raw material and more on the overall effect, which makes a lot more sense really. That's the direction that Aardman studios have always taken—using clay with other materials. That's really the direction the Vinton studio is moving towards, this idea of integrating clay with other techniques.[8]

David Daniels, Strata-cut Animator

The last 20 years have been spent proving that clay is viable. During that time, in the 1980s and on into the 1990s, the trend in animation generally has been the multilayering of all techniques, the integration of multiple levels of techniques in animation. Clay has been one part of that. Clay now functions as a graphic medium in the graphic environment. So, in the near future, clay will continue to be integrated in these multilevel techniques, as an element in the greater palette of animation.

In long form, the future of clay animation—and of three-dimensional animation generally—depends on the success of Tim Burton's feature *Nightmare before Christmas*. In that film, they are using puppet bodies with replacement faces that were sculpted in clay and cast. It's

internationally recognized character on the order of Mickey Mouse, Popeye the Sailor, or Bugs Bunny. That fact alone may account more for the way clay has developed in this century than any other factor.

In the last ten years, clay seems to have become more fashionable as an advertising medium, while longer clay narratives seem less prevalent in the post–California Raisin era. In the short term, the future of clay in the expanded market for animated features appears to be not only limited but linked to the success of other animation media, notably, Tim Burton's dimensional feature. In a future of more widely adopted three-dimensional delivery systems, the cost advantages of traditional cel animation are likely be outweighed by its inherent flatness, enhancing the future for dimensional animation.

Special techniques like strata-cut, clay painting, and animating clay on glass will no doubt continue to emerge in clay, but like most moving imagery, the future of clay animation seems linked to the computer. As various media—audio, video, text, still photos, and so forth—become digitally encoded, they converge at the computer as just another data file that can be manipulated, stored, and outputted in a variety of ways. Using clay objects to generate three-dimensional data files seems a clear-cut union of the two technologies, a model of hybridization that could be applied to a wide variety of animation techniques. If the computer becomes the place where all animators animate, the tool that all animators use to manipulate regardless of their "medium," then perhaps cel will no longer enjoy the cost advantages it has in the past. Whatever hybrid form of clay emerges, insofar as it uses the medium to "satisfy our spatial hunger" (as Clokey puts it) and to exploit the tactile, "funky" quality of the clay surface, it will remain true to the central aesthetic appeal that has driven the medium from the beginning.

As we have seen, clay is an art process that has its own potentials, is relatively easy to animate, and adapts to all kinds of incremental manipulation. Its potential for creating abstract visuals is matched by its natural affinity for clay figurative animation, in which the characters move in three-dimensional space, create their own perspective, and cast their own shadows. Beginners tend to capitalize on clay's accessibility, professionals on its expressiveness. From the earliest days of filmmaking, these potentials and the almost magical imagery generated by animated, moving clay have had a powerful appeal for artists, filmmakers, and audiences.

Around 1920, when cinema exchanged variety in the animated film for almost universal acceptance of the institutional modes of flat ani-

mation—slash and cel—it gained economy in production and established the conventions of the animated cartoon, which would become a familiar, enduring, and remarkably popular form of entertainment. Lacking the large-scale specialization and division of labor that can be brought to bear in the cel medium, clay has remained a secondary, though increasingly visible, animation technique since that time. But taken together, these conditions—its visceral visual appeal and its resistance to extensive division of labor—have ensured both the existence of the medium and its continued rarity compared with cel for the past seven decades. This situation seems unlikely to change in the near future. What remains to be seen is how new technologies—the computer and three-dimensional imaging technology—will fundamentally change animation and, in the process, change a medium that in essence remains the same animated sculpture that emerged in the early decades of motion pictures.

Clay Animation

Michael Frierson

Clay animation is a living art form. It can be seen in television series such as "Gumby," in commercials with dancing raisins, interspersed in music videos and in films, both shorts and features. The dimensionality and movement of the clay characters —as they talk, dance, sing, and run—have a distinctive quality that sets it apart from other forms of animation. Yet clay animation, which made its American debut in 1908, has always been marginalized by the dominance of cel animation (the cartoon form that made Bugs Bunny so popular). Michael Frierson explains in *Clay Animation* the reasons behind this neglect and gives the reader not just the history of American clay animation, but also the technique, the masters, and a look at its future.

Frierson begins with the basics, describing the process and aesthetic impact of clay animation. Frierson explains the interaction between camera, lighting, and set design, and how these aspects of the medium compare with other forms of animation. In so doing, the reader gains a solid introduction to new technologies. Helpful summaries, shot lists, a glossary and over 50 illustrations are provided to keep the reader in step with the discussion throughout.

With the basics firmly detailed, Frierson goes on to deftly describe the unique contributions of each clay animator. Beginning with the "founders" from the silent era, notably Willie Hopkins and Helena Smith Dayton, *Clay Animation* gives a complete historical and creative account of clay animation's main contributors, including Art Clokey, the creator of Gumby, and Bob Gardiner and Will Vinton, winners of an Academy Award for their clay film *Closed Mondays* (1974). Frierson analyzes the evolution of clay techniques, imagery, and narratives as well as the film and television landscape that gave birth to these films. Readers will find an informati and insightful description of clay animations fro the cutting edge, by such artists as Joan Gratz, Bru Bickford, and David Daniels.

Michael Frierson ends *Clay Animation* with a discussion by those active in the world of clay animation today—an independent clay animator, a commercial producer, the winner of the 1993 Academy Award for Best Animation, and others—on the future of the medium. In many ways, they echo each other, speaking of the impact of computer animatics, their concern that clay animation might become a marginal form, but also their strong belief that no other animation medium can match the artistic expressiveness of clay. Student, film buff, and animator alike will find in Michael Frierson's *Clay Animation* a direct link to the world of clay.

The Author

Michael Frierson is an assistant professor in the Broadcasting/Cinema Division of the Department of Communication and Theater at the University of North Carolina at Greensboro. While studying radio, television, and film at the University of Michigan, he wrote his doctoral dissertation on an experimental educational animated film, *Write Write*, which he coproduced for the Fund for the Improvement of Post Secondary Education. With his wife, Martha Garrett, he has produced clay animated films for Children's Television Workshop's "Square One Television" and for Nickelodeon. He has served as an associate producer for "Mardi Gras 1992," a high-definition television program for NHK in Japan. Currently, he is completing an hour-long film documentary on the life and times of the New Orleans photographer Clarence John Laughlin.