Women, soldiers, bathtubs, pianos—everything functions as raw material organized for the production of imaginative kaleidoscopic patterns.65 Behind Berkeley’s “fanciful geometric patterns, his bizarre montages of camera angles, his famous overhead shots, his kaleidoscopic effects, his cascades of designs,” was a fetishization of camera technique.66 Yet, like Ziegfeld, Berkeley claimed no conscious artistic vision: “I’m completely at a loss to explain my method. . . . I can’t be any help to you, I don’t know anything about it.”67

Berkeley’s visions, too, are filled with female-powered dynamos. In a Berkeley film it would not be surprising if a man lifted off the streamlined cover of a washing machine and inside were millions of young, beautiful women spinning in place, acting as fans, belts, and gears. The “Berkeleyesque” depends upon compartmentalizing human bodies, building abstract patterns out of repetitive elements, and then making the patterns—as opposed to the dancers—dance. “Berkeley’s choreography isn’t important for its movement of dancers,” one scholar notes, “[but] for its movement of the camera.”68 Berkeley proudly claimed there was little actual dancing in his movies. “I work, I create, only for the camera,” he confessed in 1966. “For me, if I dare to say it, it is the camera that must dance.”69

For Berkeley, the camera had to be allowed to express itself—just as modern architects and industrial designers claimed “the machine” expressed itself in streamlined design or the Bauhaus style.69 Unlike Ziegfeld, Berkeley consciously hired women who looked similar, who “matched just like pearls.”71 What is mass production besides repetition, precision, efficiency, and abundance? Reflecting back on the worst aspects of the factory system, the cybernetic theorist Norbert Wiener might have been speaking of the women in Busby Berkeley numbers: “When human atoms are knit into an organization in which they are used, not in their full right as responsible human beings, but as cogs and levers and rods, it matters little that their raw material is flesh and blood. What is used as an element in a machine, is in fact an element in the machine.”71 What is most expressly and expressively mechanical about Berkeley production numbers are the precise, incremental motions the chorus girls must perform to achieve the aesthetic of live-action time-lapse photography.

Martin Rubin’s Showstoppers: Busby Berkeley and the Tradition of Spectacle (1993) provides an excellent historical and genre analysis of the “Berkeleyesque.” In contrast to most studies placing the choreographer/director within European avant-garde and surrealist traditions, Rubin grounds
Berkeley's aesthetic in the American stage tradition of "spectacle." A nineteenth-century "aggregative" theatrical form "based on creating feelings of abundance, variety and wonder," spectacle depends upon overwhelming audiences with a surfeit of entertainment; the idea is to provide so many acts and so much information that the consumer cannot process it all in a single visit. First codified in P. T. Barnum's "American Museum," the form took hold after the Civil War in burlesque, so-called "Tom shows," medicine shows, Buffalo Bill's Wild West shows, minstrel shows, and the Ziegfeld Follies. But Rubin rightly places Berkeley within the paradigmatic challenge of the 1930s artist—that of finding a middle ground between the individual and the group. Berkeley's work celebrates both through his "ability to shift fluidly from grandiosity to intimacy."

Berkeley absorbed the tradition of spectacle in his five years as a Broadway dance director (1925-30) and later transferred it to the new medium of film. During his Broadway tenure, Berkeley's theater aesthetic combined polyrhythmic vertigo with mechanical order. An early success with small-ensemble geometric formations in *A Connecticut Yankee* (1927) merited a rare artistic profile by John Martin, the dance critic of the *New York Times*. Martin believed theatergoers were hungry for a refined artistic approach to the decade's obsession with speed and "novelty," and he claimed that Berkeley had "assume[d] the mantle of a minor prophet" by creating a kind of "high-brow jazz dancing." Berkeley's Broadway work was marked by improvisation and collaboration (hallmarks of jazz practice), and he created his dance numbers on the spot. His inspiration came "from having the girls in front of him on the stage ready to work."

Berkeley's dance numbers were so rhythmically complex that one Broadway conductor admitted he could not watch the dancers "for fear he could not move his baton to the required beat of the score." Martin perceived that Berkeley had "delv[ed] into the actual rhythmic structure of jazz to a degree that has not before been attempted." Dancers were required to execute "contrary rhythms . . . to perform simultaneously, two rhythms counter to each other, and also [to] the music." In film, this would translate into lines and circles of women moving in different directions and at variable speeds. For example, in the "By a Waterfall" number in *Footlight Parade* (1933), each circle of a five-tiered fountain of women rotates at a different rate; in the "My Forgotten Man" number of *Gold Diggers of 1933*, different lines of men march in varying
rhythms in the foreground and background. The maintenance of two or more distinct rhythms is a cardinal aspect of African music and a rarity in classical music or European-derived folk music; hence Martin’s astute perception that Berkeley had “delved into the actual rhythmic structure of jazz.” The dance critic was also awed by the abilities of “the ordinary chorus girl of today” in terms of her speed, precision, and rhythmic fluidity—skills which would have guaranteed “her elevation to stardom a few years ago.”

Martin could not imagine “kinesic progress” beyond the 1928 level: “Unless there areundreamed-of changes in the constitution of the physical universe, the human body cannot be made to move any more rapidly than it has already been trained to do for theatrical purposes.” What he did not see was that the human body is adaptive and plastic, and that Berkeley’s syncopated geometric configurations heralded the next step in mechanized choreography.

Along with the revolution in the American tempo created by jazz, Berkeley also had mechanical processes on his mind for the dances staged in The Earl Carroll Vanities of 1928. Taking his cue from a stage convention called “living architecture,” in which women were literally embedded into large props, he arranged chorines in the shape of an airplane while Lilian Roth sang “I’m Flying High” above them and the dancer Dorothy Lull cartwheeled continuously to form the propeller. (He revived this motif in the film Flying High [1931].) In other skits women “form[ed] parts of columns, ‘human fountains,’ and layer-cake-like platforms,” motifs that later became common to Berkeley films.

That revue’s most critically acclaimed number, however, was “The Machinery Ballet,” in which the chorus line transformed itself into an assembly-line factory tableaux. Inspired by a visit to the Ford plant at River Rouge, Berkeley provided “lurid flashes of fire and smoke” to produce an expressionistic atmosphere that critics compared favorably to Fritz Lang’s Metropolis (1926), Karel Capek’s play R.U.R. (1923), and Russian constructivism. The chorines were dressed not as workers but as robots, and they wore “metallic robot-style costumes emblazoned with dials and switches.” Nor did they pretend to perform any assembly-line work; instead they “shuttled and whirled mechanically in an endless circle,” just as any precision line dancers did in the 1920s. On a high pedestal, one chorine performed continuous slow cartwheels that transformed her into a “living cogwheel.” Here again is the human/machine interface with women as gears and cogs in the female-powered dynamo.
Unlike European machine dances, "The Machinery Ballet" was a tribute to the automated factory and not a social critique of mass production. The number calls attention to the relationship between the female-powered dynamo and factory realities. In a rare nod to the performing arts, the *Journal of Electrical Workers and Operators* recognized the homage and printed a photograph with the following caption in December 1928: "Midst smoke and flashes of fire, as from ... a furnace door, these dancers whirl and turn, rise and fall, leap and toss, in an ensemble, which ... gives off the dizzy impression of a modern factory. ... [S]o insistent is the pressure of wheels, pulleys, belts, endless chains of production, upon the playground of the world, that it [Broadway], too, begins to understand." It was high time, the writer noted, that "Broadway ... Fifth Avenue and Wall Street" gave credit to the "machine civilization of which we all are a part."  

Ziegfeld's and Berkeley's Machine Age modern aesthetic depended on inhibiting desire for the beautiful half-naked women on display and heightening the vertigo effects of the production numbers. For Ziegfeld, his girls were like high-quality white photographic paper awaiting his patented form of processing (glorifying); he looked less for beauty than malleability. His interviews were like screen tests in which he visualized women in sensuous fabrics and flattering lighting, their faces and walks trained to his aesthetic. In *Ziegfeld, the Great Glorifier* (1934), Eddie Cantor credited Ziegfeld with being "the first to see girls through a camera eye—long before the movie people, who learned the trick from him." Cantor noted that Ziegfeld often accepted women from their photographs after actually rejecting them in person ... in the magic of his clothes, the tint of his lights, and the effect of his ensemble, that same, plain-looking girl acquires something angelic and supernal. That was the Ziegfeld touch. 'Glorifying the American girl' was not merely a press agent's slogan—it was an actual process invented by Zieggy ... even homely-looking comedians and burlesque clowns took on an aura of grandeur on his stage.

The quality of his "camera eye" can be measured by the successful graduation from stage to screen of many Ziegfeld girls (among them Ruby Keeler, Barbara Stanwyck, and Paulette Goddard). A contemporary wrote that "his eye for detail was miraculous."  

In retrospect, Hollywood seemed a logical next step for Ziegfeld's
kind of spectacle, but he had little interest in making movies. Broadway was then the most prestigious form of American culture, and Ziegfeld was its reigning monarch; he did not consider film a competitive medium until the advent of talkies in 1927. In part, Ziegfeld had no interest in learning a new medium; Cantor pointed out that early movies were weak "technologically in his strongest suits—lighting, color and sound." Nor was Ziegfeld threatened; after all, for the first two years of talkies, the filmed Broadway musical—"canned theater," Rubin calls it—was Hollywood's first successful genre. The movie-musical formula first found its own identity in The Broadway Melody (1929), and then Berkeley took Ziegfeld's legacy into the new medium. As far as Ziegfeld was concerned, the movies crawled along in technological infancy while he painted epic spectacles on a huge canvas by focusing the efforts of first-rate artisans on hundreds of live women (and comedians, singers, and dancers).

The Berkeleysque depends upon treating women as the raw material for fantastic dream sequences, an approach pioneered by Ziegfeld that had little theatrical precedent. (Before Ziegfeld, the bare female leg itself sold tickets.) Berkeley's first movie, Whoopee! (1930), was a film adaptation of a successful 1927 Ziegfeld musical comedy; Ziegfeld also coproduced and lent his star comedian (Eddie Cantor) for the effort. A Western parody that "explicitly established the connection between Berkeley's film work and the Ziegfeldian stage tradition," Whoopee! utilized the latter's stage conventions in all three dance numbers. In the beauty parade of the "Song of the Setting Sun," chorines dressed as "Indian maidens" rode by slowly on horses and part their robes to reveal "skimpy but ornate outfit[s]." In "Stetson," Berkeley introduced his own "parade of faces" motif—close-ups on each chorine as she walked by—and shifted the focus from the female torso and legs to the face. In "Cowboy Number," Berkeley first employed his trademark top-shot to develop striking patterns of ten-gallon hats, focusing on the aesthetic element of repetition.

Cantor also starred in Berkeley's next two films, Palmy Days (1931) and The Kid from Spain (1932); Dames (1934) was virtually a tribute to the Ziegfeld chorus lines and dancers, chock-full of "precision formations" that gave short-lived currency to the term "cinematographic." As early as 1933, the Hollywood columnist Louella Parsons declared that Berkeley had "revolutionized musical comedies and made it possible for the screen to feature girl revues comparable with the Ziegfeld Follies." On all these scores, Berkeley's debt to Ziegfeld is immense.
Berkeley's aesthetic came from an unlikely combination of military drill, mass production, and jazz dance. In 1969 the *New York Times* reflected that "if there was no Busby Berkeley, Hollywood would have had to invent him." The stale rhetorical device aside, Berkeley was the perfect candidate for Machine Age worship of the camera, since he had no formal training or any artistic traditions, such as ballet, to draw upon. His only training in directing human bodies in motion came from military drill. As a second lieutenant under General John J. Pershing in France during World War I, he trained groups of twelve hundred men for parade drills and conducted aerial observations for a small army film unit. There he taught his battalion not only to march and drill to music but to do complicated maneuvers in absolute silence. Berkeley films are permeated with military drill and kaleidoscopic patterns, two activities dependent upon precise organization, repetition, and mechanical movement. He thus became an unconscious Machine Age modernist, "an outstanding choreographer who had never studied choreography, a . . . dance director who had never taken a dancing lesson, and a brilliant film maker who had given no thought to film-making until his first day in a studio." His real talent was "his ability to move great masses of people in strict time all over his stages." 86

For example, in the "Shanghai Lil" sequence from *Footlight Parade*, James Cagney's search for a whore-with-a-heart-of-gold in a Chinese port ends with a bugle call for the sailors to get back on deck, and five minutes of military drill formations follow that would not be out of place today in a college football half-time show. The climax features soldiers and "Orientalized" call girls holding up placards that form the American flag, the face of President Roosevelt, and the then-famous blue eagle of the National Recovery Administration. There are similar salutes to military and naval academies in *Varsity Show* (1937), and several girls march with rifles and drums in *Gold Diggers of 1937*. 87

The counterpoint to military drill is Berkeley's prominent use of blackface and minstrel-show motifs. In two films with Judy Garland and Mickey Rooney, *Babes in Arms* (1939) and *Babes on Broadway* (1942), Berkeley uses the minstrel show in the musical-within-the-musical that saves the day at the films' climax, and in *Strike up the Band* (1940), a white swing band saves the day; Rooney and Garland "black up" in *Babes on Broadway* (1941). 88 In these musicals, Berkeley appropriated African American music without recognizing either its creators or its function as a survival technology of rejuvenation and reaffirmation. Although jazz
rhythms are central to the Berkeleyesque, the director rarely employed black musicians or dancers and ignored swing music and dance. Berkeley instead portrayed energy visually through his constantly changing kaleidoscopic fantasy-scapes, not through individual entertainers.\[89\]

The plot of Roman Scandals (1933) ironically sets out Berkeley's inability to honor the jazz rhythms on which his aesthetic is based. Eddie Cantor plays a lazy dreamer from the small town of West Rome, Oklahoma, who gets knocked out and finds himself transported back to ancient Rome as a slave. Accidentally given a mud facial while lying on a table, he wakes up and fluidly slips into minstrel mode; he is immediately mistaken for an "Ethiopian beauty specialist" and understood to be a court eunuch. Asked by two of the emperor's harem girls for beauty tips, he sings "Keep Young and Beautiful," a production number in which "real" (African American) female slaves act as servants who attend to the all-blonde harem girls: they wax their legs, brush their hair, dress them, and massage their arms and legs. When Cantor's blackface melts under steam, all the women chase him around. Visually, Berkeley had a "penchant for rendering the chorus into white-and-black patterns,"\[90\] and the contrast of black arms on white shoulders or black women set off against white women is used to vivid visual effect. But in presenting "real" African slaves in this sequence, the movie provides a dizzying racial masquerade: the character who liberates the empire from a corrupt, repressive regime is a Jewish American comedian in blackface masquerading as an Ethiopian eunuch who, in the film's longest production number, sings a 1920s jazz number while chorus lines of white and black women chase him and each other around a shimmering black and white stage set. The vortex of racial and cultural confusion in this plot is an apt metaphor for Berkeley's anxiety of influence regarding African American survival technology.

**The Camera Dances**

What makes Berkeley a Machine Age modernist was his subjugation of dancers to the camera, which allowed the camera to "assert its own presence as an element of autonomous display."\[90\] The dances in Berkeley's first few films were "stage-bound" because the choreographer was intimidated by the new medium. For months Berkeley groped for new ideas—and a new technique—while roaming around the Goldwyn studio lot in 1929. "I realized...[cinematic] technique was entirely different from the stage. In pictures you see everything through the eye of
the camera... the director and his cameramen decide where the viewer will look. It was obvious to me that film musicals so far had been disappointing because no one thought of imaginative things to do with the camera. While pre-1930 dance directors kept the camera rooted to the floor, conceiving a movie as if from the point of view of a theatergoer, Berkeley's cinematic breakthrough came from "spectacularizing the camera." He built a monorail for the camera to travel upon to create vertigo-inducing tracking shots; he utilized revolving turntables to make heavy, static objects like pianos "dance"; and, of course, he created the famous Berkeley top-shot.

In *Palmy Days* (1931) Berkeley parodied the assembly line and the erotics of machinery in a production number at a donut factory. Set in a bakery where the "Goldwyn Girls" are live-in workers—reminiscent of nineteenth-century Lowell factory girls—the prologue finds the women "glorifying the American donut." The obvious bawdy jokes and double entendre aside, the production number connects up the machine aesthetics common to both assembly lines and chorus lines, and "satirize[s] the mechanistic precision and cookie-cutter interchangeability" of both. The women cope with the pressures of their jobs through rhythmic physical exercise at the company gymnasium in scenes that combine machine aesthetics with female display. In the campy number "Bend Down Sister," the chorines perform "synchronized calisthenics," a reference to the various gymnastic systems of Delsarte and Dalcroze then in vogue. From the "synchronized chorus movements" to the "conveyor-like treadmills" to the "revolving machine-structures" and moving platforms constantly rotating and deploying actors, dancers, and chorines, the movie is a showcase for machine aesthetics. But these assembly-line images function more as a general reference to the factory system than to anything resembling jarring, repetitive, exhausting factory work.

The machine aesthetic of the Berkeleysque in the 1930s involved abstracting parts of women's bodies to render geometrical patterns and mechanical processes. For example, the fifteen-minute "By a Waterfall" number from *Footlight Parade* begins as a pastoral fantasy of a man (Dick Powell) resting by a waterfall and singing out for some companionship. When a water nymph (Ruby Keeler) sings back, the two meet and sing a duet. Powell falls asleep on Keeler's lap, whereupon she invites hundreds of her fellow nymphs to perform for him. Soon the scenery shifts from its "realistic" natural setting to an expansive, Roman-style Olympic-sized pool with multiple platforms, underwater lighting, and classical
ornamentation. "What with all the water pumps, the hydraulic lifts, and the dozens of workmen, someone said the set looked like the engine room of an ocean liner," Berkeley recalled.96

In one section of "Waterfall," fifty or so women lie on their backs and, supported by hidden floats, intertwine their arms and legs to form "complex, rotating spokewheel patterns." They are like hubcaps spinning in the ether, and Berkeley lights them from underneath for an ethereal, disembodied effect. In another shot, the women's bodies are submerged, leaving only their heads and arms above water. As each woman extends one hand to rest on the woman's shoulder in front of her, the women transmute into vertebral sections of a long, undulating snake. Detaching themselves, they duck under water and clasp arms at the wrists to form alternate triangular and circular patterns, almost as if they were performing chemical combinations at the molecular level. "The overall effect is as if the chorus had exchanged their human forms for simpler, more elemental ones," Rubin suggests, "becoming cellular units in an overall body of abstraction." The number was the hit of the movie; at its New York premiere, audiences gave it a standing ovation, "some even throwing programs in the air."97

Many scholars have noted the erotic element—and the Freudian displacement of sexual desire—at the core of Berkeley's fantasies. For example: the suggestion of zipping and unzipping mimicked by dozens of pairs of interlocked women's legs in "By a Waterfall"; his patented through-the-legs shots; and the common push-in-pull-out pumping of his kaleidoscopic images.98 In all three cases, hordes of attractive, scantily clad women are engaged in symbolic sexual processes. As one film scholar succinctly put it, "Berkeley's production numbers provide a spectrum of images of women that range . . . from Reverence to Rape." Jack Cole, a choreographer who often worked with Berkeley, believed the dance director "reflec[ed] the erotic attitudes of the middle class." Just as Ziegfeld had made public prudence respectable for elite audiences in New York, Berkeley brought fetishized desire to Hollywood, taking "lots of blonde girls and photograph[ing] them in as many ways as were acceptable to the middle class . . . [not] completely nude, but . . . with their legs open and their breasts hanging."99

As a fellow choreographer, Cole was able to pinpoint the sexual aesthetic of Berkeley's camera eye: it was "all about looking at gorgeous women erotically with the camera as a penis substitute." The camera was anthropomorphized in Berkeley's production numbers—peeking
around corners, looking up women’s dresses—and this mechanical penis stood in for the biological one. A single heterosexual male may be satisfied with one woman, but the machine has its own aesthetic needs: it requires abundance and repetition, rather than a sexual exchange it cannot enjoy. The Berkeleysque depends upon “our perception that the women look remarkably alike,” and as they are “line[d] . . . up behind one another . . . their multiplicity is subsumed in an image of apparent unity.” To follow the logic of machine aesthetics, a camera-penis would require hundreds of females, thriving on mass-produced girls rather than emotional fulfillment with one woman. Significantly, Berkeley’s 1930s films feature mostly undistinguished male leads as opposed to the more popular virile males of the period such as Clark Gable, Gary Cooper, and Cary Grant. Rubin suggests that Berkeley chose actors such as Dick Powell precisely for “their charming innocuousness.” In effect, Berkeley uses the camera as the leading man, and it does not wish to compete for the women’s affections with a strong male actor.

In close readings of two ten-minute production numbers in Dames (1934), I conclude this chapter by teasing out the various intersections of the “Berkeleysque,” the techno-dialogic, Machine Age modernism, and the camera-as-mechanical-penis.

“I Only Have Eyes for You” and “Dames”

Three themes crucial to the techno-dialogic weave through these two musical numbers. First, the standardized girl appears to enjoy her work as a cog in an eroticized, fetishized pleasure machine that helps allay anxiety regarding the transition to urban, industrial society. Second, these numbers are cinematic fables of abundance, a rhetorical set of tropes founded in American advertising and focused on the idea of available and malleable young women. Third, for economically strapped audiences the techno-progress of American society could here be enjoyed through technological innovation and continuous novelty. No plot background is required since the two numbers are self-contained vignettes unfolding as part of a musical within the movie.

A popular chestnut still recorded often, Harry Warren and Al Dubin’s “I Only Have Eyes for You” (1934) was a ballad written for Dames that itself attempts to mediate the challenges of mass society: how to identify the distinctive qualities of one’s romantic object and ignore the