Gestural Study

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Performance has moved to the forefront of contemporary culture not because it is exempt from commodification, as a certain kind of discourse used to claim, but because it is in the *vanguard* of commodification—not of objects but of subjects. Performance in art has to be seen in the context of a more general culture of performativity in which the theatrical and economic meanings of the term *performance* become conjoined.[1] Is it a lecture? No, it's a lecture-performance, in which the speaker's embodied live presence is at least as important as the content of their speech. In this and many other contexts and registers, the *gesture* reasserts itself.

A reassessment of gesture in theory has become noticeable since the 1970s. Several of the authors in question have identified a waning of gesturality as a significant feature of capitalist modernity. In his 1977 *The Fall of Public Man*, Richard Sennett commented on the atrophying of gesture in the bourgeois-capitalist era, noting that gesturality eroded when movements started to be seen as symptomatic traits revealing an individual's true self, rather than as instantiations of a shared vocabulary of gestures.[2] The Industrial Revolution went hand in hand with the development of a bourgeois habitus that curtailed earlier forms of subjectivity. As work became repetitive and subject to the diktats of efficiency, public self-presentation underwent a transformation and was shorn of much of its theatricality. Sennett effectively presents this as a breakdown of the true gesture as culturally codified symbol and its collapse into mere symptom. By contrast, around 1900 Henri Bergson defined gestures in symptomatological terms as "the attitudes, the movements and even the language by which a mental state expresses itself outwardly without any aim or profit, from no other cause than a kind of inner itching."[3] At the theoretical level, the modern crisis of gesturality manifests itself precisely in the oscillation between gesture-as-symptom and gesture-as-symbol.

Like Sennett, Vilém Flusser tended to privilege the semiotic and coded aspects of gesture. If, according to Flusser, a gesture is "a movement of the body or of a tool attached to the body, for which there is no satisfactory causal explanation," this means that gestures transgress the mechanical mode to which Fordism attempted to reduce human movement (at least in the sphere of production) in the name of efficiency.[4] It is only when an element of codification enters into the causal

link, when a movement becomes more than the involuntary expression of an inner compulsion or outer force, that it becomes gesture. A gesture, then, is a "symbolic representation" that refers to "something other than reason." This other than reason affects the beholder; it is affect. The observer is touched: "if I accept that affect is a state of mind transformed into gesticulation, my primary interest is no longer in the state of mind but in effect of the gesture."[5] For Flusser, gesture is thus a codification of affect. However, gestures are effective only insofar as they themselves are in turn affective. They may invite codification, but they fail once they become visible as pure convention. Their sign value can be transmuted into exchange value only because they are under- and overcoded.[6] In the mode of the gestural, semiotic labor can *work* only if it is also affective labor.

Authors such as Flusser, Sennett, and—slightly later—Giorgio Agamben published their thoughts on gesture in a period marked by debates about a rupture with modernity and modernism, with industrialism and Fordism, and about the rise of services and "immaterial labor." In what follows, I identify a partial reversal of the modern decline of gesture in post-Fordist networked culture, arguing that value extraction has moved from standardization to specificity, from conveyor belt to dance moves. Looking into the work of modern as well as contemporary choreographers, scientists, and (performance) artists, from Frank Gilbreth and Lilian Gilbreth to Hito Steyerl, from Rudolf von Laban to Alexandra Pirici, allows for an analysis of this transformation—precisely through paying close attention to the ways in which modern techniques and tropes are repeated with a difference.

Regimentation and Recording

Agamben argues that the arrival of the cinema was double-edged: the cinema was both a means of reclaiming gestures and of recording their loss.[7] The years 1911–1916 are crucial here, being marked by the rise of "scientific management" in industrial production and by the crystallization of the formats and techniques that came to define Hollywood filmmaking. Frederick Winslow Taylor published *The Principles of Scientific Management* in 1911, and Frank Gilbreth's *Motion Study* appeared the same year, still under the aegis of Taylor.[8] In 1913, Henry Ford adapted the system of assembly-line production from the slaughterhouses of Chicago for his car-production conveyor belt.[9] The year 1915 saw the release of D.W. Griffith's *Birth of a Nation* (for which the director tried to atone the next year with *Intolerance*) and Charlie Chaplin's *The Tramp*, as well as the opening of the Universal City studio in Hollywood, with Thomas Alva Edison personally turning

on the electrical system during the dedication ceremony.[10]

Less of an immediately visible event, but noteworthy nonetheless, was the Gilbreths' break, in 1914, with Taylor's *time* study and its stopwatch-driven focus on pure temporal quantification, without due attention to actual *movement*. In the Gilbreths' use of media technologies more conventionally associated with the culture industry, we can get closer to identifying the dialectic of loss and recovery of the gestural. The Gilbreths used both photography and film to map work movements as spatiotemporal activity. They further spatialized the time of the stopwatch by, for instance, outfitting test subjects with small lights on their limbs, which resulted in light patterns in front of a dark grid. These so-called cyclegraphs revealed whether a movement pattern was efficient or wasteful; in the chronocyclegraph, the light is not on continuously but flashes at regular intervals, which allows for a representation of the changing velocity within movements (while the stereo-chronocyclegraph added the third dimension). Film, however, made a movement's exact internal rhythms more directly sensible.[11] In film's guise not as a medium of entertainment but one of regimentation and productivity—harking back to protocinematic practices such as Étienne-Jules Marey's, which informed the Gilbreths' work—the movements are not the gestures of the exceptional stars, clichéd as those may have been in their own right, but an ideal of efficiency to be applied to all workers.[12]

Gesture of even the most carefully articulated kind always ran the risk of registering as little more than noise in industrial capitalism, with its Gutenbergian notion of authorship as ownership. In this regime of intellectual property, it was far from obvious how dance—choreographed gesture—could be codified and count as authored art. In the 1890s, Stéphane Mallarmé noted that a ballet dancer could suggest, "through a kind of corporeal writing that would require paragraphs of dialogue and descriptive prose to be rendered in writing: a poem disconnected from any scribe's apparatus."[13] Here, the physical gesture of dance becomes a fleeting vision of a future language beyond writing. However, the problems Loïe Fuller encountered in trying to protect her dances—Mallarmé came under the spell of Fuller in 1893, writing about her repeatedly—suggests the problems of attempting this within a print-based, Gutenbergian cultural framework.[14] The previous year, the New York judge who rejected Fuller's copyright claim for her Serpentine Dance had stated, "An examination of the description of [Fuller]'s dance, as filed for copyright, shows that the end sought for and accomplished was solely the devising of a series of graceful movements, combined with an attractive arrangement of drapery, lights, and shadows, telling

no story, portraying no character, depicting no emotion."[15]

Fuller's Serpentine Dance was a privileged subject for early cinema—though, with Fuller refusing to cooperate and her dance being unprotected, filmmakers moved to hire her imitators, often passing them off as "La Fuller" herself. Imitation of performers' personae became a contentious issue with the rise of film stardom. Chaplin sued a comic making knock-off films under the name Charlie Aplin for copyright infringement, and the trial focused heavily on the use of a Chaplinesque name and appearance, down to the specific pants associated with the Tramp character.[16] To what extent, however, could specific *movements* (slapstick or other) be protected?

The Brussels-based art practice Agency, founded by Kobe Matthys, which collects and presents "things" that have been subject to an intellectual property dispute, has documented several cases that reflect this process and the challenges posed to nineteenth-century conceptions of authorship by the rise of mechanical reproduction. While *Thing 001557 (Serpentine Dance)* concerns Fuller's failed endeavor to protect her dance, *Thing 001504 (Magician's Coat Sequence)* concerns an early case in which choreographed movements did become legally protected: a slapstick sequence by Harold Lloyd from his 1932 film *Movie Crazy* that was later restaged without permission by the film's director in a film for Universal, *So's Your Uncle* (1943). The Harold Lloyd Corporation sued for copyright infringement and won.[17] What emerges across Agency's gesture-based things is that the movement of gestures across time and space—as analyzed by Aby Warburg—is curtailed as they become private (corporate) property. This becoming-property involves a becoming-authored and a becoming-codified.[18]

In words that apply perfectly to the "Magician's Coat" sequence, Bergson explains that the *automatism* of gesture is what generates comedy:

> About gesture, however, there is something explosive, which awakes our sensibility when on the point of being lulled to sleep and, by thus rousing us up, prevents our taking matters seriously. Thus, as soon as our attention is fixed on gesture and not on action, we are in the realm of comedy.[19]

Bergson's "without any aim or profit" is questionable, now more than ever: what marks the gestural turn in contemporary capitalism is precisely the economic exploitation of gestures. If gestures are *surplus*, they are not the surplus value generated in industrial capitalism, which was dependent on labor-power expressed in abstract labor-time, but rather an excess that Fordism found difficult to mine and that has become key in recent transformations of capitalism. The cinema proved

adept at mining this surplus early on. The Hollywood studio system may have mimicked industrial production methods, but film as entertainment is in many ways the dialectical counterpoint of the Fordist factory.

Film thus proved suitable for two very different types of recording, two seemingly opposed yet complementary forms of capture. Chaplin or Lloyd provided exceptional slapstick, while the Gilbreths' films and photographs of the typist champion Anna Gold, a female Stakhanov of the office, used a rigid norm of efficiency. However, when Leger included a cubist Chaplin doll in *Ballet mécanique*, he prefigured Walter Benjamin's later diagnosis that Chaplin's movements are "put together from a series of hacked-up pieces of motion" and that "it is always the same jerky sequence of the smallest motions which raises the laws of the filmic sequence of images to that of human motor actions."[20] Such a "jerky sequence of the smallest motions" allowed for a slapstick synchronization of filmic apparatus and the spool of the conveyor belt: in *Modern Times* (1936), the mechanical movements of assembly-line work induce spasmodic tics in the Tramp. If here industrialized art imitates an alienated life, the converse also happened: Siegfried Kracauer noted that the "Little Miss Typists" of the 1920s, rather than becoming Anna Gold–type champions of efficiency, modeled themselves after the actresses they saw in the cinema. In his account of the mutual mirroring of film and life, Kracauer focused on melodramatic plot devices, but Marcel Mauss specifically noted that the gait of nurses in New York mimicked the movements of movie heroines.[21] And even France was not immune: "American walking fashions had begun to arrive over here, thanks to the cinema."[22]

The dream factory of film introduced a form of *Wertschöpfung* that transcended the abstract and quantifiable labor-value of the Fordist factory. Classic Hollywood developed conventions and clichés that were distinct from the stage and had to be actualized in the star's ineffable idiosyncrasies of speech, gaze, gesture. The Hollywood studio system thus prefigured and inaugurated an intensification and *qualification* of labor—even while doing its best to ensure full

Stereo-chronocyclegraph of champion typist Anna Gold, ca. 1915. Frank B. Gilbreth Collection, Kheel Center for Labor-Management Documentation and Archives, Cornell University Library, Ithaca, NY.

ownership and legal protection for its properties.[23] When people today are supposed to "give 110 percent," this is only seemingly a Taylorist embrace of pure quantity, of raised production quota. What such workers are asked to do is to allow their lives to be colonized ever more fully: to be available 24/7 and to not just work hard but be good sports and invest their personality in the job. This time, it's personal.[24]

Here, we have a return of gesturality, no matter how impoverished the repertoire may still be. The (self-)management of gestures moves into a new phase as they come to be seen not merely as indices of character but of this character's performative commitment to intense (self-)exploitation. Gesturality here becomes visible as surplus, as overcoded and undercoded alike. Movements come to function as contemporary raw material to be mined algorithmically in a neoliberal attention economy that derives surplus from the ineffable. However, this is by no means an absolute break. The Fordist economy of movement continues to inform—one might say, haunt—contemporary forms of gesturality in the sphere of semio-affective labor. The nature of what counts as economic, efficient, and profitable has itself changed, but the management of movement has only intensified as it "left the factory."

Alleviating Alienation, Mapping Effort

If Chaplin mimicked the alienating shock of industrial production while the Gilbreths tried to optimize it out of existence through their work with exemplary productivists such as Anna Gold, others attempted to use optical media to record seemingly authentic and organic artistic gestures. Some of these attempts to reclaim media technology for the registration and transmission of uniquely aesthetic gestures came straight out of the military-industrial complex. The constellation of Gold and Chaplin needs to be completed with Pablo Picasso drawing with light, as seen in the photographs for a 1950 *Life* magazine spread.
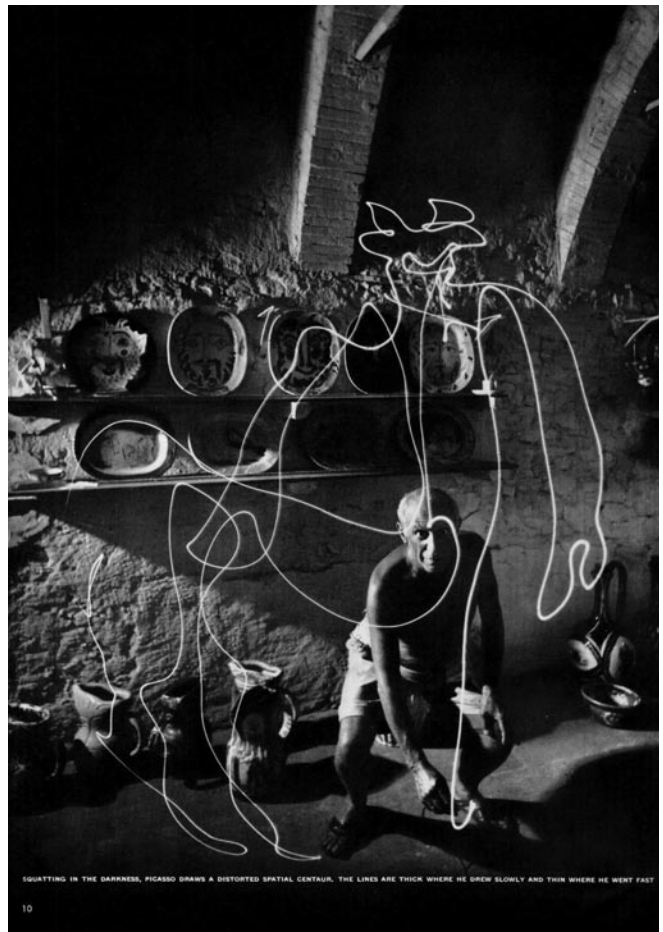
These pictures were taken by Gjon Mili, an MIT alumnus who had worked with Harold Edgerton on the development of stroboscopic devices that could document the phrases of machine movement (rather than the motions of human workers).[25] Edgerton's timer mechanisms proved to have important military uses during World War II and in the inauguration of the nuclear regime. He used the insights and technical breakthroughs of his industrial work as the basis for the high-speed timer mechanism in the "Fat Boy" bomb dropped on Nagasaki, and its offspring.[26] From working with strobes to optimize performance, Edgerton went on to contribute to a new kind of flashlight, a lethal exposure.[27] This is not, however, the aspect of his work he focused on in the popular photobooks he pub-

lished with James R. Killian, which featured athletes, flying hummingbirds, drops of water or milk, and bullets piercing apples. Dancers and conductors also put in appearances, but there is a sense that these are all just demonstration models: the real subject and star is Edgerton's advanced version of Gilbrethian motion study.[28] Mili's photography is indebted to and largely parallels Edgerton's, but he had a greater interest in "qualifying" what was a quintessentially quantitative method. By outfitting Picasso with a small flashlight bulb at the end of a cable and using a long exposure, Mili made the apparatus and the artist collaborate on creating nonstandard movements.

Here, the point was no longer to standardize and optimize a worker's performance but to allow a unique and privileged artist-subject to trace arabesques with a light bulb; arabesques that, while presumably originating from a dialectic of the artist's powerful mind and capacity for physical expression, would become truly visible only on the photographic plate.[29] While other artists experimented with light-drawing (including Man Ray and Asger Jorn), Mili's photographs stand out because he had the experience and the equipment to time the moment when, at the end of the exposure time, with the ges-

ture completed, a strobe flashlight could be used to expose the scene so that Picasso was in perfect view along with his light drawing.[30] In keeping with the "double agent" position of Eadweard Muybridge and other pioneers, Mili mediated between MIT and bohemia. He used cutting-edge technoscience to glorify the movements not only of athletes but of dancers and artists. Strobes and timers that had been developed for optimizing industrial production, and that had proved useful in a military context, were also used to show a world of movement seemingly untrammeled by industrial exigencies: Picasso as the anti-Gilbrethian subject par excellence but captured by directly related technologies.

However, during these same decades—the 1930s and the 1940s—the choreographer Rudolf von Laban proposed an alternative to the Gilbreths' motion study that was

SQUATTING IN THE DARKNESS, PICASSO DRAWS A DISTORTED SPATIAL CENTAUR. THE LINES ARE THICK WHERE HE DREW SLOWLY AND THIN WHERE HE WENT FAST

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predicated on closer attention to the body and its energies. Laban was not content with creating dances that counter industrial alienation in the rarified register of high art. His early practice had been profoundly implicated in the *Lebensreform* movement and its attempts to create more natural forms of *Körperkultur*; his activities at Monte Verità in Ascona are a case in point.[31] For Laban, there needed to be a eurythmic continuum between choreography and *Lebenspraxis*. Such a project proved open to fascist co-optation, and in the early 1930s Laban sought to demonstrate that his mass choreographies were compatible with Nazi notions of mass spectacle. Nonetheless, Laban's pageant for the 1936 Berlin Olympiad, which staged a rhythmic *Volksgemeinschaft* of amateur dancers from all over Germany, was rejected by Joseph Goebbels and Adolf Hitler. The art still contained too much expressionist solipsism and did not take the next step toward the relentless subjugation of the individual.[32] Belatedly, Laban opted for emigration to the United Kingdom.

What unites Laban's earlier work and his UK-based effort study from the late 1930s onward is the desire to develop sustainable rhythms that mediate between the individual's possibilities and limitations and the demands of modern society. His observation that "[effort-rhythm] was the cohesive medium of all living styles of architecture, painting, sculpture and fashion in ancient times," and that "[our] age and civilization are definitely on the poor side, both in effort-expression and effort-reading," are toned-down echoes of his earlier attempts to re-create the lost total "effort-rhythm" with totalitarian means.[33] Taylor- and Gilbreth-style "scientific management" having raised concerns that mechanical efficiency exhausted and destroyed the worker, Laban analyzed "the effort capacities displayed in the functions of man's bodily engine, and . . . the rules which govern their economic and efficient application."[34] While the "engine" metaphor is very much of its time, Laban proposed a more "holistic" focus on individuals and their potential as well as defects, pioneering a "human resources" approach that points beyond the Gilbreths' horizon. While fatigue study was an element of Gilbrethian motion study, and they even opened a "Fatigue Museum" to showcase designs and solutions that combat fatigue, the measure of fatigue

Below: "Fight pantomime" by two early pupils of Rudolf von Laban. From F.H. Winther, *Körperbildung als Kunst und Pflicht* (1919).

Opposite: Effort graph. From Rudolf von Laban and F.C. Lawrence, *Effort* (1947).
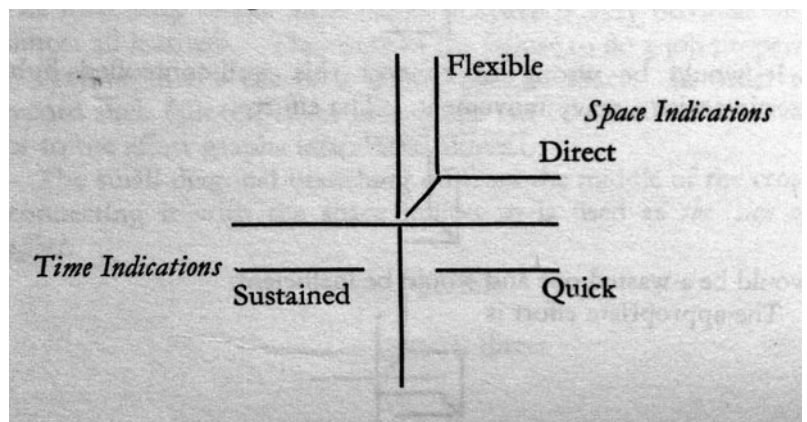
remained a combination of the efficiency of work (as registered in chronocyclegraphs and on film) and the actual output produced by the worker.[35]

As might be expected from the creator of Kinetography or Labanotation, which he had developed in the 1920s, Laban set out to construct a notation system instead of using photography and film to capture and analyze effort and movement in the workplace. (The Gilbreths had also devised a vocabulary of simple graphic signs named *therbligs*, each of which stands for a simple action that can be placed in a sequence; however, they became associated mostly with photomechanical recordings.) In contrast to Labanotation, the complementary effort graph system Laban elaborated in the United Kingdom is synchronic rather than diachronic. Whereas Labanotation shows a linear unfolding of movements in time, effort graphs seek to give a hieroglyphic encapsulation of the "rhythms of [a worker's] bodily motion" as indicators of the (efficient or wasteful) effort involved.[36]

When trying to improve the manual packaging of Mars bars on a conveyor belt during World War II, Laban used a linear kinetographic notation to chart the exact unfolding of the sequence of motions.[37] However, when it came to analyzing the nature of the effort involved in an action (rather than specific movement patterns), the effort graph needed to be deployed. These graphs use a vertical axis to indicate the level of exertion, from light (top) to strong (bottom), and a horizontal axis to indicate control, from fluent (left) to "bound" (right). There are added "time indications" and "space indications" that increase the complexity.

With this system, Laban mapped not only manual or industrial labor but also the exertions of "mental workers," noting for instance—in a book coauthored with his associate F.C. Lawrence—that "[when] the office worker has become used to the burning up of nervous tissue without the relief by bigger movements, his performance will be less disturbed by the addition of emotional shadow moves. It is the same with a child who has become used to sitting quietly at a desk."[38] "Shadow moves" is Labanese for (mostly) involuntary move-

ments that frequently accompany a primary physical exertion and that can take on the characteristics of symptomatic tics in office work where no real visible rhythm appears to exist. In all cases, whether of mental or physical labor, Laban considers "rhythmic control" to be essential in order to prevent "effort-habits" from getting out of hand. Individuals may have different abilities and "biases," but these must be managed in accordance with their capabilities.

His belief in the superiority of the graphs notwithstanding, Laban evinced great descriptive powers in the more theatrical passages that dot his major text on effort study. Discussing a meeting chaired by "an enlightened industrialist," Laban describes his antagonist as "[attacking] vigorously with intensive cutting and hitting shadow moves," while the chairman "answered with quiet smoothing gliding efforts and occasional sharp dabbing gestures."[39] The description is almost like that of a scene from a silent film: the choreographer as observer of what remains of the gestural—often in the form of pathological outbursts—in the industrial regime. In Brechtian terms, one could characterize Laban's written tableau as a *social gest* uniting symbolic and symptomatic traits. In his "Short Organum for the Theatre" (1948), Bertolt Brecht proposes this notion of the social gest as key to the actor's craft in his epic theater: "The realm of attitudes adopted by the characters towards one another is what we call the realm of gest. Physical attitude, tone of voice and facial expression are all determined by a social gest: the characters are cursing, flattering, instructing one another, and so on."[40]

These gests are *social* precisely insofar as they are symptomatic of wider economic, social, and political issues. This also sets them apart from Bergson's "inner itching"; with Brecht, the itch has been socialized, as subjectivity and its falterings are socially produced and reproduced. Different degrees of control and of conscious coding are involved in Brecht's examples. A beggar desperately struggling against guard-dogs is markedly different from a bureaucrat using an excessive flourish to sign papers. However, when they are *staged* in the theater, all social gests need to be represented with *legibility*. Because of this, Roland Barthes, in his 1973 essay "Diderot, Brecht, Eisenstein," links gesture to the *tableau*, the pictorial scene that fetishistically condenses complex narratives into "decisive moments."[41]

Laban and Brecht both attempted to make gestures legible with their graphs and tableaus. Whereas Brecht's tableaus were in the service of dialectical didacticism, prefiguring the revolutionary negation of the bad life, Laban's project was ameliorative: combatting dysfunction, whether on the level of Mars bar wrappers or their managers. In this sense, Laban's

work prefigures the postwar anthropological "microanalysis" of motion as developed by Ray Birdwhistell, who used film in conjunction with "kinegraph" notation to analyze social function and dysfunction.[42] Embedded in modern industry, Laban's work marked the shift from a rigidly quantitative conception of motion study to an acknowledgment of affect—in the name of a more encompassing notion of corporate and organizational rationality.[43]

The Affectory

As part of Boris Charmatz's *20 Dancers for the XX Century* in the two-day event *If Tate Modern Was Musée de la danse?* (May 2015), Frank Willens redanced and discussed Chaplin's parodic and spasmodic gestures in *Modern Times*. Standing in a room dedicated to black-and-white photographic portraits, Willems performed "dances of alienation" that included work by Meg Stuart as well as the Chaplin segment. Here, Bergsonian slapstick was unpacked in a way that stresses the social production of the "itch." Chaplin's mimetic take on industrial labor and its pathologies, while rooted in vaudeville and early cinema, was itself a product of the "dream factory" of the Hollywood studio system, whereas Willens's version of it occurred within the museum as a post-Fordist site of accumulation. The museum is no longer the extra-economic zone that it was once conceived to be, where the residues of capitalist accumulation were given a semiautonomous refuge; rather, it is fully integrated into the *fabbrica diffusa* or social factory—a term introduced by Mario Tronti in the 1960s to signify that in advanced capitalism, production is no longer limited purely to the site of the (industrial) factory, but takes over the whole of society.[44] The notion of the social factory has become a

Boris Charmatz. *20 Dancers for the XX Century*, 2012–ongoing. View of Frank Willens performing at *If Tate Modern Was Musée de la danse?* Tate Modern, May 16–17, 2015.

popular theoretical trope as Western economies "deindustrialized"—even though, obviously, neo-Fordist factories still proliferate, often with horrendous working conditions. Those iPhones we use to take pictures in museums have to be produced somewhere. The diffuse factory can be both Taylorist drudge and ongoing dance.

In line with their 2013 *Immaterial Retrospective* at the Venice Biennale, in 2014 Pirici and Manuel Pelmuş developed *Public Collection of Modern Art* for the Van Abbemuseum's exhibition *Confessions of the Imperfect.* For the duration of the show, groups of young performers enacted artworks from the nineteenth and twentieth centuries. These included Édouard Manet's *Déjeuner sur l'herbe* and a painting by Piet Mondrian, as well as avant-garde manifestos. Harun Farocki was included both with *Videograms of a Revolution* (1992, his collaboration with Andrei Ujică) and *Workers Leaving the Factory* (1995). The latter includes a scene from *Modern Times* in which Chaplin accidentally causes a riot outside the factory gate. Farocki presents this as a repetition of cinema's primal scene: Louis Lumière's *La sortie de l'Usine Lumière à Lyon*, or *Workers Leaving the Lumière Factory in Lyon*, from 1895. The Pirici/Pelmuş reenactment had the performers marching from the central room of the old museum building toward the entrance opposite. This they did four times in a row, acknowledging the repetition in Farocki's piece, without actually exiting the building. In contrast to the Lumière workers going for their lunch break, these workers did not leave the museum-as-factory but continued the program. After all, you can't really leave the diffuse factory anyway.

Recent pieces by Pirici continue to be grounded in a performative activation of the cultural archive—or rather, of specific, carefully curated cultural archives. Recurring in several pieces are references to the golden record carried on NASA's *Voyager*, sent into space in 1977 to give aliens a sense of life on Earth via a selection of symbols, images, and sounds. The

Alexandra Pirici and Manuel Pelmuş. *Public Collection of Modern Art*, **2014–2015. Performance view, Van Abbemuseum, Eindhoven.**

problematic universalism of such a summa of the planet, courtesy of NASA's technoscientific elite, is acknowledged by Pirici in her weeklong 2017 performance-exhibition at the Neuer Berliner Kunstverein by including Gil Scott-Heron's *Whitey on the Moon* among the materials enacted by her more than eighty performers. Other "performative actions" here included "Ocean-floor eels colony," "Bird song (the extinct Huia—*Heteralocha acutirostris*)," "Skype login sound," "Michelangelo: *David*," "Wooden Bodhisattva from Shanghai," and "Depeche Mode: song excerpt—*Enjoy the Silence*." Performers segued in and out of these actions in waves. At times, this meant that progressively more and more dancers took on a static pose such as that of Michelangelo's *David*—but of course such poses can maintain only a precarious, breathing stillness. In other cases, such as that of "'Occupy' movement hand signals," the action was more properly gestural.

Throughout, visitors moved and stood in between (groups of) performers—sharing the floor of the affectory, so to speak. At times it was not immediately clear whether someone was a performer or a fellow visitor; at other times, the distinction was clear as day, as visitors tried to glance past a performer's steady gaze. At Pirici's 2016 Berlin Biennale performance *Signals*, the situation was more stage-like, with performers usually occupying the back of the dark room and sometimes coming up close to the visitors near the entrance. This was the case, for instance, with one bit based on a phrase uttered by Andrea Fraser during late-1980s mock-academic panel performances by the feminist collective V-Girls. Fraser's persona would occasionally end some demonstration of her theoretical skills with a desperately peppy "I would like to conclude by saying that I am available for immediate employment." When Fraser's sentence came up in *Signals*, the performers moved to the front, staring into an individual viewer's face for

Alexandra Pirici. *Signals*, 2016. Performance view, Ninth Berlin Biennale for Contemporary Art, 2016. Photo: Timo Ohler, courtesy the artist.
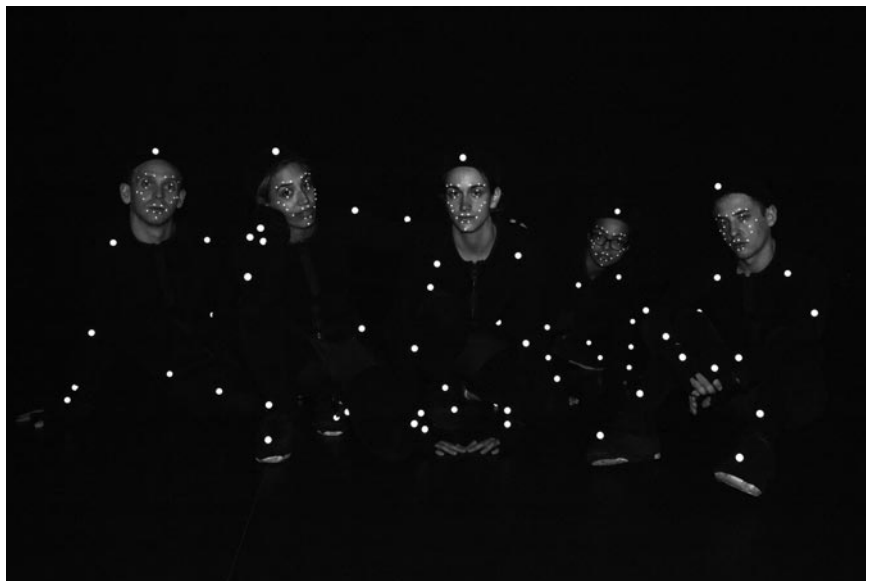
considerable time, the impact of the stare not really lessened by the twilight. More so than in the original V-Girls piece, the confrontation broke down any remaining fragments of a fourth wall. You may not have a conventional job yourself, but I'm asking you to employ me, right now.

The actions in *Signals'* repertoire were reshuffled each day by a content-ranking algorithm and through requests from online users. Some of those elements were also part of Pelmuş and Pirici's *Public Collection of Modern Art*, such as Vladimir Tatlin's *Tower* and the Nicolae Ceauşescu execution scene (via Farocki and Ujică's *Videograms of a Revolution*). However, *Signals* combines (art-)historical and contemporary references from "Portrait of Toussaint l'Ouverture" and "Confused Travolta meme" with futurist entries such as "EU flag with five stars collected by Tate Modern in 2032" and "Abramović holograms for her 2030 MoMA retrospective." The Soviet space dogs Belka and Strelka and the "2001 monolith scene" again forge a link with the Cold War space race and its projected futures.

The performance took place in a darkened room. The performers wore dotted motion-capture suits, suggesting that their actions would immediately be made productive, processed, and circulated in a digital iteration. However, no motion capture actually took place, except for that in the viewer's memory. As with the reference to a hologrammatic future version of Marina Abramović's *The Artist Is Present*, there is the suggestion that performative gestures are increasingly likely to lose their ephemerality. Recorded and stored, possibly in 3D, they are open to endless revalorization. Steyerl's 2015 video installation *Factory of the Sun* tells a tangled story of motion-capture slaves whose moves are turned into artificial sunshine and reused countless times, while people killed in protests are revived as avatars. The piece, which quotes Donna Haraway to the effect that "Our machines are made from pure sunlight," is shown in a space with dark walls on

Alexandra Pirici. *Aggregate*, 2017–2018. Performance view, Neuer Berliner Kunstverein, Berlin, 2017.

which a light grid has been overlaid, recalling the Gilbreths' chronocylcegraphs. *Factory of the Sun* portrays a world in which value extraction has moved from standardization to specificity, from conveyor belt to dance moves.

As evinced by performances such as Pirici's, there is a premium on physical presence in the field of art. As Steyerl argues, the art world is an economy of presence.[45] On the other hand, bodies and their gestures and movements become mirrored as they produce data traces and become data doubles in real time. The proliferation of "dance exhibitions" in recent years almost appears as a compensation for the tracking of visitors' movements. Carefully watching Pichet Klunchun walk along the perimeter of a space at Tate Modern, one becomes engaged in an act of embodied, reciprocal surveillance.[46] Meanwhile, viewers and spaces alike are becoming progressively wired. Viewers become their own data doubles, moving dots, as museums and exhibition spaces become "smart buildings."

In Pirici's performances, the sequencing may be due to an algorithm or online requests, and in her piece *Leaking Territories* at Skulptur Projekte Münster 2017, visitors could use the performers as an embodied Google by calling out search terms. A term would always first be met by the line "We will now take a few moments to profile you to present the most relevant answers based on your age, gender, appearance." The performance took place in the old town hall where the Treaty of Münster was signed, laying the foundations for a "Westphalian" order of nation-states, and indeed the entire piece revolved around territoriality and sovereignty from the seventeenth century to the present and indeed the future. Even as the audience shared a space with the performers, the piece emphasized that presence is never pure presence when physical space is always also the geodesic space of data networks, when the exhibition or performance space is also a triangulated space of signals.[47]

Dora García, *Instant Narrative*, 2006. View of installation and performance in the exhibition *Power to the People: Contemporary Conceptualism and the Object in Art*, Australian Center for Contemporary Art (ACCA), Melbourne, 2011. Courtesy the artist and Michel Rein, Paris/Brussels.

A speaker is the centre of the attention.
Nervous laugher as the women arrange the corner to their liking.

A helper artistically abandons a clump of leads for a moment.

The photographer directs the camera to the screen. Shifts his collapsible step with his perfectly scuffed sneaker.

The Coming Body Language

Flusser's work on gestures, from his lecture in Fred Forest's 1974 video *Les gestes du professeur* (The gestures of the professor) to the posthumously published book *Gestures*, coincided with the expansion of semio-affective labor. While acknowledging that gestures are

overdetermined, Flusser maintained that unconscious and symptomatic moves could not be real gestures: the gesture is symbol, aesthetic artifice, rather than a symptom.[48] Time and again, through various attempts to theorize the gesture, the notion of a "language of gestures" faces off against gesture as symptomatic outburst, as tic, as obtuse surplus or lack. This tension cannot be wished away. Within a social and cultural regime marked by the erosion of traditional gestural forms and the elaboration of new convention, the gesture *is* this tension.

Taking cues from Harun Farocki, Claus Pias has analyzed the rise of "operational gestures" that are discreet and standardized enough to operate computers from the first graphic tablets and sketchpads of the 1960s down to today's smartphones.[49] With its user surface being a touchscreen, the smartphone is controlled through "a few basic gestures: the familiar tap, swipe, drag, pinch and spread."[50] Making gestures purposive and profitable is part of the remit of contemporary capitalism, and Apple and other corporations have indeed attempted—with mixed success—to patent gestures required for operating their smartphones and other devices. These gestures have been inventorized and choreographed by Julién Prévieux in his project *What Shall We Do Next?*, which constitutes an "archive de gestes à venir" (archive of gestures to come) based on patent applications for specific movements for gesture-controlled mobile devices and computers.[51] Formerly fleeting gestures become codified; the symbol is patented.

Even if many such patent applications have been struck down in court, such legal codification is one indication of the growing importance of gestures in digital communication, which seemingly reverses the industrial-capitalist decline of gesturality in the register of post-Fordist capitalism. As Jodi Dean says, "In digital communication, images supply the raised eyebrow, sidelong glance, and disgusted grimace inseparable from face-to-face communication. Word, gesture, and image intersect, overlap, and combine."[52] Orality and literacy collapse, merge, and mutate in a GIF culture in which John Travolta meets Drake meets Trump meets Harold Lloyd.

The entire body, as data body, is monitored for its gestural data. Several companies offer "wearables" that stores can make their sales staff wear, with the most advanced models being able to register "tone of voice, posture and body language, as well as who spoke to whom for how long."[53] Effective movement is reconfigured as affective gesture. Tone and posture matter, as does everything that was once considered to be the private realm of reproduction. The private, domestic sphere was once considered a refuge where the gesturality that was stinted in regimented bourgeois public life

could find an outlet of sorts. Now we see the creation of a new "public man" (to invoke Sennett again) whose gesturality is not so much repressed in one sphere and tolerated in another as it is subject to management and value extraction across the board. This also means that—tacit or explicit—norms for (un)desirable behavior need to be formulated.

As Adam Greenfield observes, this involves the installation of "an 'ambient factory' where decisions one thought to be purely personal—sleep cycles, nutritional patterns, exercise habits—become subject to employer monitoring and intervention."[54] A project/product such as MIT's DoppelLab visualizes and "sonifies" the data generated by a building (including its motion sensors, humidity sensors, etc.) and by its many phone-carrying users in real time, again abstracting the physical building's denizens and turning them into located dots in a navigable virtual space.[55] In addition to carrying their phones, such a building's denizens may also be wearing fitness trackers that produce yet more data—about their vital functions. A different form of gesturality comes into view here: the swarm-like movements of aggregated data bodies.

The notion of the data body was introduced in the 1990s, at the height of internet utopianism, by the Critical Art Ensemble (CAE): "With the virtual body came its fascist sibling, the data body—a much more highly developed virtual form, and one that exists in complete service to the corporate and police state."[56] The entire development from Fordist motion study to post-Fordist motion tracking has been one of virtualization and datafication, entailing an effacement of the physical body and its gesturality in favor of data bodies.[57] Dead labor in the form of algorithmic intelligence mines human activities and extracts values from pattern recognition and prediction. As the CAE argued, while the data body has a long history, it matured with digital technology:

> From the moment we are born and our birth certificate goes online, until the day we die and our death certificate goes online, the trajectory of our individual lives is recorded in scrupulous detail. Education files, insurance files, tax files, communication files, consumption files, medical files, travel files, criminal files, investment files, files into infinity . . .[58]

The data body's production by the physical body and its movements can be visualized in real time. Such visualizations of datafication are key instances of contemporary gesturality insofar as they go beyond an investment in efficiency in a standardized Taylorist or Gilbrethian sense. Efficiency certainly comes into it; in Harun Farocki's 2001 film *The Creators of Shopping Worlds*, we see an eye-tracking study in

which the test subject's eye movements predict their route through the shopping center, which can thereby be optimized. Another shopping center has been outfitted with cameras that register visitor movement from above, showing individual consumers to be part of swarmlike flows of mobile points. However, the swarming data bodies of prisoners and football players in related Farocki pieces like *I Thought I Was Seeing Convicts* (2000) and *Deep Play* (2008) stage movement as the dialectic of symptom and symbol that is fundamentally gestural. Overdetermined yet hopefully decodable, volatile yet hopefully predictable, these movements are every bit as gestural as those analyzed by Laban in his countermodel to the Gilbreths' work. Farocki's essayistic meditations on operational images show how contemporary forms of surveillance, behavioral management, and crowd control move beyond Fordist motion study toward gestural study.

The museum is the new shopping mall. Jonas Lund's piece *Gallery Analytics* (2013) can track any Wi-Fi-enabled device (i.e., your smartphone) on its path through the exhibition space in real time, as a performative implementation of the kind of technology Farocki's work reflected on. This is done via a mesh Wi-Fi network. Receivers are distributed across the building, allowing for a triangulation of coordinates. Lund uses the Indoor Triangulation Service (ITS) provided by Navizon—a company that provides services for the Cleveland Museum of Art as well as for major corporations. Presumably they provide businesses as well as government agencies with the tools to track individuals—individual employees, as with mail and courier services, or subjects of legal or extralegal surveillance—while also enabling museums to chart swarm movements and "optimize" routes and displays.[59]

Dora García created a more reflexive and embodied engagement with visitor tracking in her performance/installation *Instant Narrative* (2006). Visitors see a description of themselves and their movements, typed in real time by a writer behind a laptop (perhaps including literary speculation about them), appear on a screen. The typist, usually a member of the cultural-academic precariat hired to sit in the gallery all day, becomes a literary Laban who engages with the data body's analog analogue and becomes observed in turn. Gestures trigger gestures—moves and shadow moves. Compared to García's piece, Lund's has a certain elementary bluntness. It makes visible in the exhibition what would otherwise remain implicit and what may actually not require visualization for human eyes. As Trevor Paglen notes, operational images such as that in *Gallery Analytics*, designed to be seen and interpreted by human eyes, are transitional artifacts: translations of the "real" machine vision, which is increasingly dominant.[60]

Yet there will be sensate consequences. The data body will provide feedback to the physical body (which will be made to match certain racial and gendered profiles).

The political implications of this are made explicit in Nina Støttrup Larsen's lecture-performance *The Teacher and the Sensors* (2017), which can be seen as a synthesis of Lund's *Gallery Analytics* and García's *Instant Narrative*. Støttrup Larsen instructs the audience members how close to stand to her and one another while holding forth on surveillance technologies with names such as Sorama, Vinotion, MILESTONE HUSKY, or ATOS. At some points bumping into or leaning on audience members while looking at her smartphone, Støttrup Larsen details that Sorama learns through acoustic triangulation in order to "create the perfect 3D image of me," while MILESTONE HUSKY reacts to specific words and combinations of words and ATOS studies walking patterns. These and twenty-five other systems are in use in an area of Eindhoven (an old industrial town that has reinvented itself as a hub of design and smart technology) called the Stratumseind, which borders on the Van Abbemuseum and the Designhuis.[61]

One night, the director of the Designhuis opened a slightly creaking gate so that partying students of the Dutch Art Institute—where Støttrup Larsen was a graduate student, and I was a teacher—could quietly catch some air outside. Two minutes later, two police officers showed up, leading the artist to realize that in this part of town, as part of a "Living Lab" public-private partnership, "my every move and every word was being recorded, triangulated, studied and unknowingly offered as lessons free data and labour for future crowd control technologies and a future re-colonization of open urban space on a planetary scale."[62] The city as DoppelLab, with citizens as unremunerated workers cum guinea pigs. What is striking in the shift from motion study to algorithmic crowd control is that a norm is posited that is no longer that

Hito Steyerl. *Factory of the Sun*, 2015. Still from video.
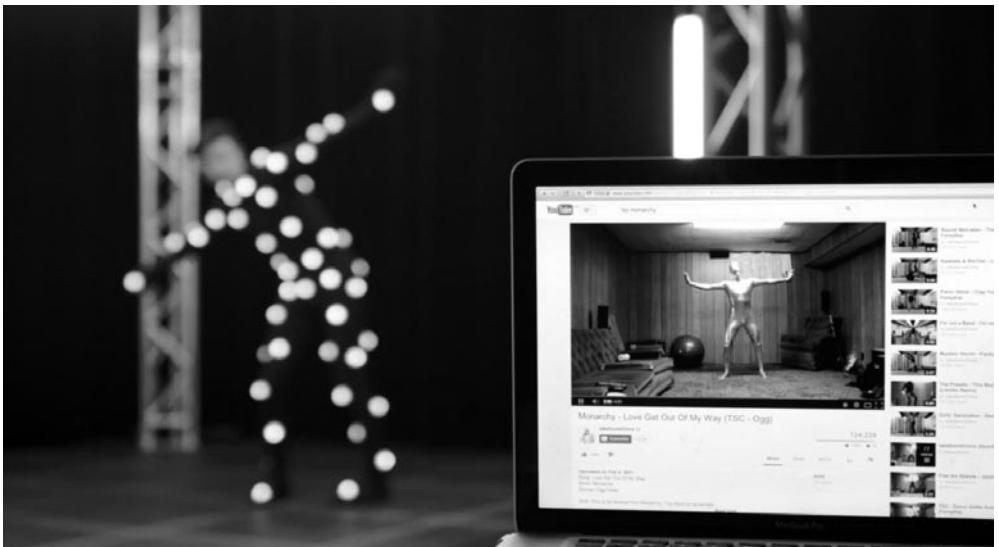
of industrial effectiveness but of social policing. Excessive gestures are no longer "merely" regarded as uneconomic and wasteful in the context of the workplace but as potentially dangerous in "public" space. One problem is that what constitutes an excessive gesture in this space is not subject to public debate. Suddenly a certain word, an intonation, an accent, the fact that three people are standing in a certain spot, or that a person is moving at a certain space—all of these may come to be read as troublesome gestures demanding an instant intervention.

Networked capitalism does its best to erode the distinction between production and consumption and between labor and leisure.[63] Both Facebook and art spaces hosting lectures and reading groups throw a spanner in the works of the labor theory of value, as participants outside of any labor-wage relation are actively adding value.[64] In the process, what is labor and what is not becomes almost impossible to determine, as value may be extracted from a chance encounter in a bar after the event, an audience member's cough, or an act of refusal and defiance. We can, with Steffen Mau, see this is as part of the progressive quantification of all aspects of life; in a society of control and performance management, we produce our data doubles and becomes "metric selves."[65] However, the progress of quantification from Fordist motion study to the present has reached a dialectical tipping point: as the ineffable is mined for information, a *qualification* of the quantitative occurs. If it's no longer about a pure optimization of output but about the management of sleep patterns, dietary habits, movements in digital and physical spaces, then we have moved from motion study to forms of gestural study that are about managing the affective and social gestures of humans. Quantification itself undergoes a qualitative turn.

In the case of motion tracking in galleries, shopping centers,

Nina Støttrup Larsen.
The Teacher and the Sensors, 2017. Performance at Dutch Art Institute, Arnhem.

or on the street, the extraction of value takes the form of monitoring and policing by the public-private security industry. Now that human living labor may indeed be in the process of becoming a "nostalgic remnant," as many types of jobs face looming obsolescence and machinic value extraction from human subject-matter moves into overdrive, population control will only become more important. Individual and collective movements likewise need to fit into certain patterns to be considered normal and acceptable behavior, but again a sense of productive play is factored into the equation: explore the exhibition, the shops, the bars! Have a consumerist *dérive*. Just don't be surprised if algorithmic cops show up when a gate creaks in the night. One truly cannot exit the affectory—least of all one's data body.

Open Ending

For Bergson, the gesture was defined precisely in opposition to the act:

> Gesture, thus defined, is profoundly different from action. Action is intentional or, at any rate, conscious; gesture slips out unawares, it is automatic. In action, the entire person is engaged; in gesture, an isolated part of the person is expressed, unknown to, or at least apart from, the whole of the personality.[66]

In the realm of contemporary performance, in its economico-theatrical sense, this distinction seems overly neat and schematic. If today's cultural economy is crucially dependent on the affectivity and effectivity of gestures, gestures might become actions when they fail to synthetize contradictions into acceptable performance. When the contradictions that produce contemporary subjectivity are articulated as graceful breakdowns, as asemiotic surplus, as suggestive lack, *the gesture springs into action*. Gesturality goes beyond and against Flusser's "symbolism" when it is overdetermined and overcoded to the point of cracking under the pressure. Overdetermination goes into overdrive. The process of subjectivation stutters and generates forms of nonnormative transsubjectivity, or transindividuality.[67] In gestures, the economic becomes material or medium for forms—forms of life and, potentially, forms of resistance.

Notes

This article is partly derived from talks I gave in 2016 at The Power Plant in Toronto and Centro de Arte Dos de Mayo in Madrid; from my essay "Speech Gestures," *Texte zur Kunst*, no. 104 (December 2016); and from "Dance Factory," *Mousse*, no. 50 (October 2015).

1. Sven Lütticken, "General Performance," in *E-flux Journal*, no. 31 (January 2012), http://www.e-flux.com/journal/31/68212/general-performance/. See also Alexandra Pirici, "Performance as Conjuring," *Texte zur Kunst*, no. 110 (June 2018): 74–79, which uses a passage from Anna Tsing's book *Friction* (2008) to theorize the relation between economic and dramatic performance; as well as Sabeth Buchmann, "Feed Back: Performance in the Evaluation Society," in the same issue (34–51). With Jon McKenzie, one can add technological performance to theatrical (or "cultural") and economic (or "organizational") performance; see Jon McKenzie, *Perform or Else: From Discipline to Performance* (London: Routledge, 2001), 95–135.

2. Richard Sennett, *The Fall of Public Man* (Cambridge, UK: Cambridge University Press, 1974), 104.

3. Henri Bergson, *Laughter: An Essay on the Meaning of the Comic*, trans. Clousley Brereton and Fred Rothwell (New York: Macmillan, 1914), 143.

4. Vilém Flusser, *Gestures* (Minneapolis: University of Minnesota Press, 2014). A selection of essays compiled by Flusser shortly before his death in 1991, this book amounts to his summa on the subject. In 1974, Flusser had lectured on the subject of gestures in a video made in collaboration with artist Fred Forest, *Les gestes du professeur* (The gestures of the professor).

5. Flusser, *Gestures*, 5–6.

6. The notion of sign value is from Jean Baudrillard, *Pour une critique de l'économie politique du signe* (Paris: Gallimard, 1972).

7. Giorgio Agamben, *Means without End: Notes on Politics*, trans. Vincenzo Binetti and Cesara Casarino (Minneapolis: University of Minnesota Press, 2000), 49, 53.

8. Frank B. Gilbreth, *Motion Study: A Method for Increasing the Efficiency of the Workman* (New York: D. Van Nostrand Company, 1911), contains highly laudatory references to Taylor's work (see esp. 94). The book documents Gilbreth's method in its infancy and includes photo sequences of bricklaying but no chronocyclegraphs.

9. Strictly speaking, what operated in the slaughterhouses was a *dis*assembly line, allowing for a systematic picking-apart of animal carcasses. Ford reversed the process.

10. Thomas Schatz, *The Genius of the System: Hollywood Filmmaking in the Studio Era* (London: Faber and Faber, 1988), 17.

11. The chronocyclegraph can be placed in a fairly direct genealogical connection with the work of Marey. See Marta Braun, *Picturing Time: The Work of Étienne-Jules Marey (1830–1904)* (Chicago: University of Chicago Press, 1992), 343–44.

12. On Marey and the Gilbreths, see Braun, 340–50.

13. Stéphane Mallarmé, "Ballets," in *Divagations* (Paris: Charpentier, 1893), 73; my translation. This passage is evoked by Jacques Rancière in *The Politics of Aesthetics: The Distribution of the Sensible*, trans. Gabriel Rockhill (New York: Continuum, 2004), 23.

14. For Mallarmé on Fuller, see particularly Stéphane Mallarmé, "Les fonds dans le ballet," in *Divagations*, 179–85.

15. Judge Lacombe, Circuit Court of New York, verdict in the case *Fuller v. Bemis*, 18 June 1892, quoted from Agency's text on *Thing 001557 (Serpentine Dance)*.

16. Peter Decherney, "Gag Orders: Comedy, Chaplin, and Copyright," in *Modernism and Copyright*, ed. Paul K. Saint-Amour (Oxford, UK: Oxford University Press, 2011), 135–54.

17. *Thing 001504 (Magician's Coat Sequence)* was presented and discussed by Matthys at the Jornadas de Estudio de la Imagen, 27–30 June 2016, Centro de Arte Dos de Mayo (Madrid), organized by Leire Vergara.

18. In a 2012 project at Les Laboratoires D'Aubervilliers, Agency investigated cases that show how it was only gradually, in the second half of the twentieth century, that "expressions that were solely fulfilled by means of bodily movements were considered 'worthy' of copyright protection and choreography was included into intellectual property." "Assemblée (Les Laboratoires D'Aubervilliers)," Les Laboratoires d'Aubervilliers, http://www.leslaboratoires.org/en/projet/assemblee-les-laboratoires-d-aubervilliers/.

19. Bergson, 144.

20. From Benjamin's notes for "The Work of Art in the Age of Mechanical Reproduction," quoted in Susan Buck-Morss, *The Dialectics of Seeing: Walter Benjamin and the Arcades Project* (Cambridge, MA: MIT Press, 1989), 269–70.

21. Siegfried Kracauer, "The Little Shopgirls Go to the Movies" (1927), in *Mass Ornament: Weimar Essays*, trans. Thomas Y. Levin (Cambridge, MA: Harvard University Press, 1995), 292.

22. Marcel Mauss, "Techniques of the Body" (1935), in *Economy and Society* 2, no. 1 (1973): 72.

23. Of course, this also meant that the producer/studio, rather than any of the "creative" personnel, had to be legally acknowledged as the true "creator" of the film. See Bernard Edelman, *Ownership of the Image: Elements for a Marxist Theory of Law*, trans. Elizabeth Kingdom (London: Routledge & Kegan Paul, 1979), 49–67.

24. See also Jonathan Crary, *24/7: Late Capitalism and the Ends of Sleep* (London: Verso, 2013).

25. On Edgerton and Mili, see James R. Killian Jr., "Papa Flash and His Magic Lamp," in Harold E. Edgerton and James R. Killian Jr., *Moments of Vision: The Stroboscopic Revolution in Photography* (Cambridge, MA: MIT Press, 1979), 2.

26. Ned O'Gorman and Kevin Hamilton, "EG&G and the Deep Media of Timing, Firing, and Exposing," *Journal of War and Culture Studies* 9, no. 2 (2016): 182–201.

27. My language here evokes Akira Mizuta Lippit's *Atomic Light (Shadow Optics)* (Minneapolis: University of Minnesota Press, 2005).

28. See Harold E. Edgerton and James R. Killian Jr., *Flash! Seeing the Unseen by Ultra High-Speed Photography* (Hale, Cushman and Flint, 1939; 2nd ed., Boston: Charles T. Branford, 1954); and Edgerton and Killian, *Moments of Vision*.

29. A selection of Mili's Picasso pictures, including the "centaur" photograph, was published as "Speaking of Pictures," *Life*, 30 January 1950, 10–12.

30. I am indebted to Jos ten Berge for discussing the photographs with me.

31. See Edmund Stadler, "Theater und Tanz in Ascona," in *Monte Verità: Berg der Wahrheit*, ed. Harald Szeemann (Locarno: Armando Dadò; Milan: Electa, 1980), 126–35.

32. See the entry on *Vom Tauwind und der neuen Freude* (1936) in Evelyn Dörr, "Rudolf Laban: Das choreographische Theater" (self-published, 2004), 448–68.

33. Rudolf Laban and F.C. Lawrence, *Effort* (1947; London: Macdonald

and Evans, 1967), xv.

34. Laban and Lawrence, 2.

35. On the Fatigue Museum, see Frank W. Gilbreth and Lillian M. Gilbreth, *Fatigue Study: The Elimination of Humanity's Greatest Unnecessary Waste* (New York: Sturgis and Walton, 1916), 99–113.

36. Laban and Lawrence, xi.

37. Davis, 25–27.

38. Laban and Lawrence, 64; see also 21–22.

39. Laban and Lawrence, 81.

40. Bertolt Brecht, "A Short Organum for the Theatre" (1948), in *Brecht on Theatre: The Development of an Aesthetic*, ed. and trans. John Willett (New York: Farrar, Straus and Giroux, 1964), 198.

41. Roland Barthes, "Diderot, Brecht, Eisenstein" (1973), in *The Responsibility of Forms: Critical Essays on Music, Art, and Representation*, trans. Richard Howard (Berkeley and Los Angeles: University of California Press, 1991), 91.

42. See Seth Barry Watter, "Scrutinizing: Film and the Microanalysis of Behavior," *Grey Room*, no. 66 (Winter 2017): 32–69.

43. In the postwar context, this movement into the affective register continued in various ways. One particularly striking example can be found in Cold War "civil defense" drills. As Joseph Masco argues, the real aim of these drills, of having the populace "[learn] every move perfectly," was psychological mobilization, the creation of a permanent state of affective emergency. Joseph Masco, *The Theater of Operations: National Security Affect from the Cold War to the War on Terror* (Durham, NC: Duke University Press, 2014), 61.

44. Tronti first introduced the concept (though not the actual term) in Mario Tronti, "Factory and Society" (1962), trans. Guio Jacinto, *Operaismo in English*, https://operaismoinenglish.wordpress.com/2013/06/13/factory-and-society/. See also Hito Steyerl, "Is the Museum a Factory?," *E-flux Journal*, no. 7 (June 2009), http://www.e-flux.com/journal/is-a-museum-a-factory/.

45. Hito Steyerl, "The Terror of Total Dasein: Economies of Presence in the Art World," *Dis Magazine*, n.d., http://dismagazine.com/discussion/78352/the-terror-of-total-dasein-hito-steyerl/.

46. Klunchun's performance was part of the two-day event/exhibition *If Tate Modern Was Musée de la danse?* (2015).

47. The notion of geodesic space plays a central role in Christopher Kulendran Thomas's video *60 Million Americans Can't Be Wrong* (2017), where (in the context of the artist's deeply problematic *New Eelam* project) it is opposed in a provocative but all too abstract way to the "old" space of national sovereignty.

48. Flusser, *Gestures*, 4–5.

49. Claus Pias, "Die Gestalt der Geste," in *+Ultra Gestaltung schafft Wissen*, ed. Nikola Doll, Horst Bredekamp, and Wolfgang Schäffner (Leipzig: E.A. Seemann, 2016), 275–84.

50. Adam Greenfield, *Radical Technologies: The Design of Everyday Life* (London: Verso, 2017), 15. Greenfield notes that the push to patent gestures appears to have stalled, as a number of key patents have been rejected in court (321 n. 3).

51. Prévieux has realized two videos, *Sequence #1* and *Sequence #2* of *What Shall We Do Next?* (2013 and 2014), with the former being animation and the latter performance-based.

52. Jodi Dean, "Images without Viewers," *Still Searching . . .* (blog),

Fotomuseum Winterthur, 6 January 2016, https://www.fotomuseum.ch/en/explore/still-searching/articles/26418_images_without_viewers.

53. Greenfield, 197.

54. Greenfield, 197.

55. See "DoppelLab: Experiencing Multimodal Sensor Data," MIT Media Lab, School of Architecture + Planning, Massachusetts Institute of Technology, https://www.media.mit.edu/projects/doppellab-experiencing-multimodal-sensor-data/overview/.

56. Critical Art Ensemble, *Flesh Machine: Cyborgs, Designer Babies, and New Eugenic Consciousness* (New York: Autonomedia, 1998), 145.

57. Here I use the term *motion tracking* primarily to refer to surveillance technology rather than to motion capture for film or games.

58. Critical Art Ensemble, 145. On the CEA, see also Brian Holmes, "Three Keys and No Exit: A Brief Introduction to Critical Art Ensemble," in *Critical Art Ensemble: Disturbances* (London: Four Corners Books, 2012), 11–16.

59. See Jonas Lund, "Gallery Analytics," artist's website, https://jonaslund.biz/works/gallery-analytics/.

60. See Trevor Paglen, "Operational Images," *E-flux Journal*, no. 59 (November 2014), http://www.e-flux.com/journal/59/61130/operational-images/.

61. All references are to the unpublished script of *The Teacher and the Sensors* (2017).

62. In early 2018, Støttrup Larsen presented a further development of this performance in Stuttgart under the title *Patterns of Extraction*.

63. See also my essay "The Coming Exception," *New Left Review*, no. 99 (May–June 2016): 111–36.

64. On the attention economy and the labor theory of value, see, for instance, Jonathan Beller*, The Cinematic Mode of Production: Attention Economy and the Society of the Spectacle* (Hanover, NH: Dartmouth College Press, 2006).

65. Steffen Mau, *Das metrische Wir: Über die Quantifizierung des Sozialen* (Berlin: Suhrkamp, 2017).

66. Bergson, 143.

67. Derived partly from Gilbert Simondon, the latter term is a key concept in Bernard Stiegler's work.