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CALDER/PHOTOGRAPHY: IMAGES IN LIMBO AND NONHUMAN PERCEPTION

I. A Paradox

From the 1930s through the end of his life in 1976, Alexander Calder created a body of work as inimitable and identifiable as any produced in the twentieth century. Yet the photographs made of his sculptures during his formative years are so varied as to defy the coherence of the oeuvre. Reassuringly familiar, for example, is the late color photograph, by Robert Fine, of *Universe* set in motion (1974, Sears Tower, Chicago, fig. 1), in which an enormous corporate commission presents itself like a diminutive early sculpture Similarly approachable are stunning book spreads such as the blackand-white photograph by Pedro Guerrero of Prickly Pear and Octopus (both 1964), from the 1966 monograph Calder (fig. 2). We are accustomed to photographs such as these. But there are also others that are unfamiliar and jarring. A photograph by Thomas Bouchard from about 1931, of Calder with his famous Cirque Calder (1926–31), captures a jumble of arms and faces and figurines that is closer to the photodynamism of Italian Futurist Anton Giulio Bragaglia (himself inspired equally by the speed of machines and the force of spirit photographs) than to any traditional representation of sculpture (fig. 3). Bouchard's photograph was among the first, but hardly the last, to try to record Calder in motion. About a year later, Montparnasse photographer Marc Vaux shot several works—including an untitled motorized sculpture (c. 1932, p. 134) and Machine motorisée (1933, p. 136)—gyrating before the camera. At the end of the 1930s, Herbert Matter, Calder's most consistent photographer and a lifelong friend, made an important series of stroboscopic

fig. 7: Calder and shadow from *Untitled*, c. 1934 Photograph by DeWitt Ward





fig. 1:

Universe set in motion, Sears Tower, Chicago, 1974

Photograph by Robert Fine

fig. 2: Previous page Pages from *Calder*, 1966, by H. Harvard Arnason, showing *Prickly Pear* (1964) and *Octopus* (1964) Photograph by Pedro Guerrero

rig. 3: Calder with *Cirque Calder* (1926–1931), c. 1931 Photograph by Thomas Bouchard



photographs of another untitled mobile (1936) set in motion, transmogrifying the hanging sculpture into a vector of pure motion¹ (fig. 8, pp. 129–131). A dozen years later, a vibrantly blurred image by Gordon Parks, its colors now degraded, seized *Red*, *Yellow and Blue Gong* (1951) in motion. There is considerable variety, no doubt, among the works represented. But there is even greater variability among the photographs. Rather than consolidate Calder's oeuvre, they threaten to tear it apart.

II. Images in Limbo

Three models for the photography of sculpture predominated during Calder's lifetime—none of which depicted Calder's work in his formative decade. No surprise, then, that Calder is absent from the recent proliferation of publications and exhibitions on sculpture and photography. And yet the range and intensity of the photographic record of Calder's work provide crucial insights not only into his path-breaking kinetic sculpture, but also into the fundamental relationship of sculpture and photography to movement, time, and human perception. It is incumbent upon us to revisit Calder's place—and conspicuous absence—in the history of the photography of sculpture.

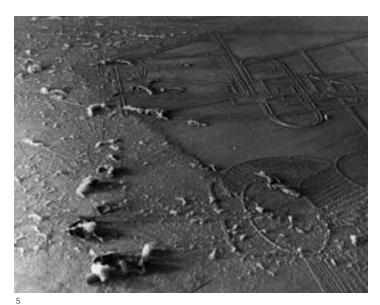
Let's begin with three dominant models for the photography of sculpture. The first model advances the sculptor as photographer. Exemplary is Constantin Brancusi. "The photographs Brancusi took of his own works were the only ones he wanted reproduced, circulated and considered." Brancusi understood his sculptures to be inextricably bound to the surrounding space, lighting, and larger mise-en-scène. Where he could not control the setting himself—as he did with extraordinary care in his studio—photographs served as models. "To see a Brancusi sculpture reproduced in the artist's own photograph can infuse the viewing of the actual

object with some of the artist's own desire, his own thoughts on the work." In the case of Brancusi, a good photograph by the artist is often closer to his intentions than an original work poorly installed by a collector or curator.

American sculptor David Smith similarly recognized the importance of photography for the reception of his sculptural practice.⁵ Beginning in the 1940s, Smith reclaimed the visual promotion of his work from the photographers hired by his gallery. He took thousands of photographs of his sculptures, which were published in countless magazines, newspapers, journals, and exhibition catalogues, often as anonymous illustrations. As art historian Sarah Hamill has argued, Smith's photographs deviated markedly from traditional documentation: He dispensed with the neutral backdrops, even lighting, and frontal vantage points standardized by professional photographers, and instead set his sculptures within the landscape outside his studio in upstate New York and shot them from below. In his photographs, Smith's sculptures are at once tied to this world and signal another, separate space.⁶

Calder cannot be assimilated into the tradition epitomized by Brancusi and Smith for one resounding reason: He did not photograph his own sculptures.

A second notable tradition is that of renowned photographers translating sculptures into their own idioms. Chief among these are the photographs made by Edward Steichen of Auguste Rodin and his sculptures, above all, *Rodin—The Thinker* (1902, fig. 4). In this elaborate, large, gum bichromate print, Steichen combined two negatives: a portrait of Rodin before his *Monument to Victor Hugo* and a photograph of *The Thinker*. What's more, he reversed the portrait of Rodin—so that the artist and sculpture face off in parallel poses—and subsumed the textures of flesh, cloth, bronze, and marble beneath the painterly effects of the gum bichro-



mate process to create a cohesive Pictorialist photograph. Artists like Man Ray took this model to an extreme, creating sculptural assemblages exclusively to be photographed such as The Enigma of Isidore Ducasse (1920, extant sculptures were remade after the photograph)—or transforming extant sculptures into wholly new artworks, such as Dust Breeding (1920), Man Ray's unsettling and aggressively cropped photograph of Marcel's Duchamp's *The Bride* Stripped Bare by Her Bachelors, Even (1915–23) blanketed in a thick layer of dust (fig. 5). In the case of Calder, the closest we come to such an encounter are the photographs by Brassaï and André Kertész of Calder and his Cirque Calder (1926–31, fig. 6). And yet these photographs are categorically different from Steichen's Rodin—The Thinker or Man Ray's Dust Breeding. They are reportage and portrai ture (Kertész) or night spectacles (Brassaï), rather than attempts at independent artistic photographs to rival the art they photograph.7

The third—and by far the most dominant—is the documentary tradition. The ambitions of this tradition for sculpture are embodied in "A Note on the Photographs," penned by photographer Pedro Guerrero for a 1966 monograph on Calder:

My primary concern, in taking the photographs for this book, has been to let Calder's works speak for themselves. I have attempted to show each individual work as it related to its environment, or if this was not possible, to show it as simply as I could; and I have tried to find for each work the most revealing attitude, and to photograph it from the point of view which best describes it.8

Guerrero's modesty and restraint heed the directives enumerated already at the end of the nineteenth century by art historians like Heinrich Wölfflin.9 Unassuming photographs like Guerrero's populate the majority of publications on Calder over the last many decades. But they figure far from exclusively in Calder's formative years, and for good reason. From the moment Calder introduced movement as the defining feature of his work, traditional documentary photography could hardly do it justice. And motion was not the only indispensable quality photography failed to capture. His sculptures burst with color in an era dominated by black- and-white documentary photography. No less problematic (even if less often evoked) was the absence of sound in the documentation of Calder's works, despite the prevalence of acoustic elements in numerous mobiles, beginning with his very first hanging mobile, Small Sphere and Heavy Sphere (1932/33, pp. 78-79), which doubled as a percussion instrument. (The importance of sound and chance in Calder's work was not missed by John Cage and Earle Brown, both of whom composed music for and with

fig. 4: Edward Steichen, *Rodin—The Thinker* (1902)

Man Ray, Elevage de Poussière (1920)

Portrait of Calder with Cirque Calder (1926-1931), 1929



A true representation of Calder's work in black-and-white photography might look something like the photograph taken by Dewitt Ward of the shadows of an untitled standing mobile (c. 1934, fig. 7, p. 120). Clearly visible in triple silhouette, the multiplication of rings, rods, and strings implies motion. Yet Ward offers not the object in motion so much as a static object multiplied through light and shadow; not volume, but surface projection; not time, but space; not the integral object in the round, but a mere fragment; not color, but black-and-white shadows. Ward's photograph is striking even though—or because—it tells us next to nothing about the large yellow ring and small red one whose shadows it documents, let alone the black-and-white rings, red ball, and circular metal frame (from which everything hangs), all of which remain outside the frame. Calder and his standing mobile are here reduced to a puppeteer and puppet performing a shadow play. An enchanting photograph, certainly, but hardly an adequate representation of the sculptor and his work. Indeed, Calder's works shout movement, color, and sound. Why would anyone turn to still, black-and-white, and silent photographs, especially in the allimportant late 1920s and early 1930s when film technology shifted to sound and then color?

The insufficiency of traditional black-and-white photography, coupled with Calder's choice not to document his own work, proved to be an enormous opportunity for a range of photographers to explore the qualities of two different media: sculpture (Calder's) and photography (theirs). In the formative years of his practice, roughly the late 1920s through the early 1940s, Calder worked with a variety of photographers, each with their own approach and style. The photographs are clearly not independent artworks. And yet Calder's sculptures demand too much of photography

to allow for straightforward documentation. The greatest challenge, accepted by photographers like Vaux and Matter, was to capture Calder's sculptures in motion. And insomuch as they attempted to capture this essential quality in the original sculptures, they defied or even violated those originals. The photographs of Calder in motion are the result of complex and invariably imperfect negotiations. Accordingly, the question is not what the photographs fail to reproduce movement, color, sound, three dimensions, etc.—but rather what the photographs produce for the very first time.

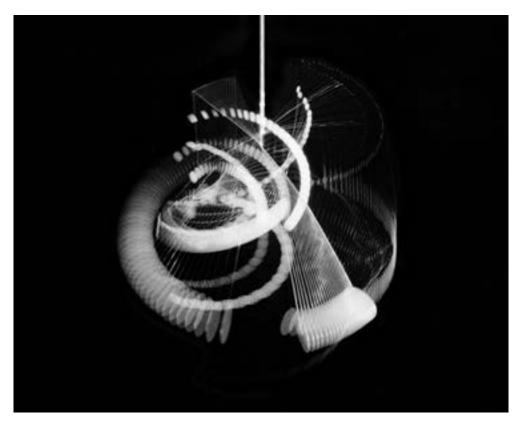
III. The Dematerialization of Sculpture or: A False **Photo-History of Calder**

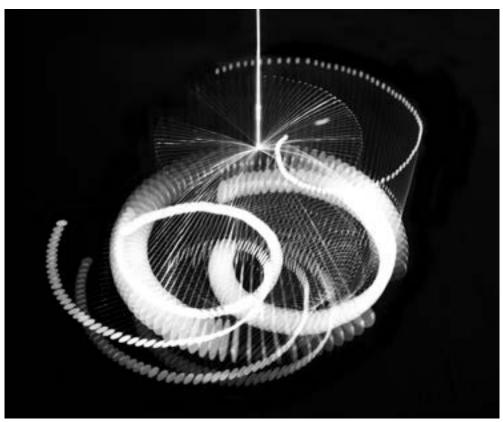
Among the most striking and significant photographic records of a work by Calder is the series produced by Matter of an untitled 1936 mobile set in motion (c. 1939, fig. 8). Photographs from the series appeared in important publications such as the catalogue for the 1943 MoMA retrospective, graced the covers of the February 1939 issue of Plus (which included the James Johnson Sweeney essay "Alexander Calder: Movement as a Plastic Element") and the 1946 catalogue for Alexander Calder: Mobiles, Stabiles, Constellations (which included Jean-Paul Sartre's rightly famous essay on the artist), and, in recent years, have become staples of catalogues and essays on Calder. If this series of images epitomizes the photography of Calder in motion, what type of history does it construct?

First, it is a series, not a single photograph. If scholars and photographers, such as Wölfflin and Guerrero, aimed to capture the best vantage point, Matter was smart enough to recognize that no single photograph could capture a Calder sculpture, let alone a mobile in motion. Second, the series partakes in a long history of photographic motion studies from (at least) the late-nineteenth-century chronopho-

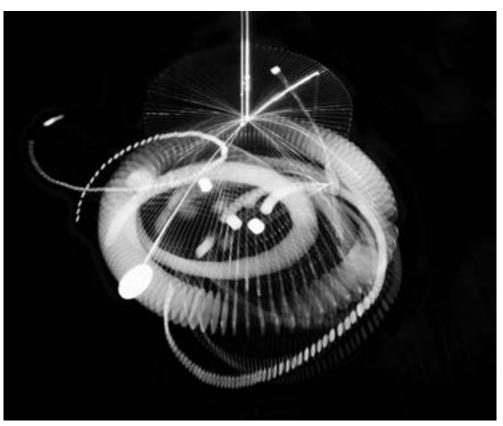


tography of French physiologist Étienne-Jules Marey to the stroboscopic photography of American electrical engineer Harold Edgerton in the 1930s (figs. 9-11). Marey and Edgerton—like Matter, later—took advantage of controlled darkness and rapid exposures to reveal not only a single moment, but also a sequence, be it the steps of a marching solider, the wings of a bird in flight, the swing of a golf club, or the splash of a drop of milk. (Matter borrowed Edgerton's techniques and equipment to make stroboscopic photographs of Calder's mobiles. Fittingly, examples of their works appeared together in a 1943 MoMA exhibition on "Action Photography.") In many respects, motion studies were the appropriate genre for photographs of mobiles in motion. Third, and more problematic, Matter's series of stroboscopic photographs aligns Calder all too closely with a history of kinetic sculpture understood in









figs. 8b-e: Untitled (1936) set in motion, c. 1939 Photographs by Herbert Matter

terms of dematerialization. For among the key publications in which Matter's photographs appeared was László Moholy Nagy's posthumous summa Vision in Motion (1947). In the chapter on sculpture, Moholy-Nagy outlined five stages of development, culminating in the mobile:

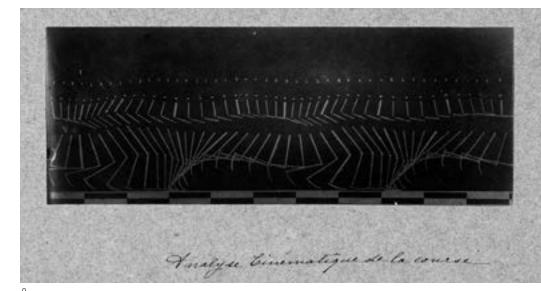
The "mobile" is a weightless poising of volume relationships and interpenetrations. With this transformation, the original phenomenon of sculpture—the elements of which equaled material plus mass relationships—becomes dematerialized in the abstract formula: sculpture equals volume relationships.¹⁰

Moholy-Nagy's primary visual example is his own revolutionary "moving sculpture," Light Prop for an Electric Stage (1930), posthumously and more famously dubbed the Light Space Modulator. But he gives nearly equal weight to the work of Calder, representative of "the young generation" (even though they were born only three years apart), specifically a pair of photographs by Matter: a small one (below) of the untitled 1936 mobile at rest and a large stroboscopic one (above) of the mobile in motion. The caption reads: "This photographic motion study is infinitely more expressive than the static picture of the original, illustrated below. We have to learn to see the new eloquence of mobile objects and all moving phenomena"11 (fig. 12). According to Moholy-Nagy, "Alexander Calder tried to demonstrate the biological experience and the plastic essential of motion in mobiles splendidly interpreted as 'virtual volume' in Herbert Matter's photographs." 12 This is an essential reading of Matter's photograph. But the reading—like the photograph—abuses Calder's sculpture in critical respects. For unlike the beating wings of birds, the swing of a golf club, or the oscillations of Naum Gabo's Kinetic Construction (Standing Wave) (1919–20), Calder's mobiles do not engender blurred vision in human beings, a

"deficiency" that can be "rectified" by mechanical vision (as was the case for the scientific photography of Marey and Edgerton). Quite the contrary, Edgerton's shortest intervals between exposures lasted millionths of a second; Matter's must have been thousands of times slower. Works such as the untitled 1936 mobile are set in motion by the measured tempi of human touch or ambient air. Unlike the revelatory photographs of Marey and Edgerton, which render the invisible visible, Matter's photographs introduce nebulousness and virtuality where previously none existed. They effectively dissolve into a cloud of motion a sculpture whose movement would otherwise be entirely legible to the human eye. Matter successfully suggests movement at the expense of the dissolution of the sculpture. And he introduces, for better and worse, a vision that is radically nonhuman.

IV. Nonhuman Perception

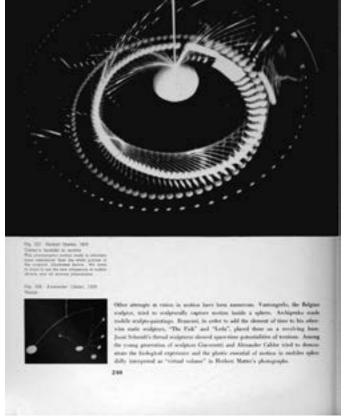
Mobiles and stabiles—terms introduced by Calder's friends Marcel Duchamp and Jean Arp to describe, respectively, his kinetic and static sculptures—anticipate a crucial neologism by Andy Warhol to designate his Screen Tests (1964-66) and films like *Empire* (1964), in which there is little to no movement: "stillie." In a world where everything is supposed to move—the "movies"—a movie without movement gets marked as a "stillie." Sculptures, of course, are not supposed to move. But in Calder's world of motion, mobiles quickly became the dominant (unmarked) term such that the term "stabile" became necessary. Crucially, Warhol's "stillies" are neither still photographs nor film stills. They do not merely overturn the movement-stillness binary opposition; they displace it altogether. "Stillies" are "movies" with little to no movement. 13 Calder's mobiles quite naturally beckon the movies. But they also invite photographs whose natures and nomenclatures are yet to be determined. The stroboscopic photographs of Matter and, even more so, Vaux's











Marey, cinematic analysis

Marey, chronophotograph, 1883. Photograph and text from albums assembled and annotated between 1882 and 1889, under the direction of Marey. The caption reads: Analyse cinématique de la course." (Cinematic analysis of running.) Fonds Marey. Collège de France

Photograph of Georges Demenÿ, 1884. Album A, plate 12, Musée Marey, Beaune

Harold Edgerton, Golfer, 1937

László Moholy-Nagy, Vision in Motion (Chicago: Paul Theobald, 1947): page 240



Marc Vaux

Untitled set in motion, c. 1932

fig. 13: Calder letter to Paul Nash, May 14, 1936

long exposure photographs are such images: still photographs with little to no stillness.¹⁴

Calder's sculptures were hardly the first to induce long photographic exposures. Plaster casts were the perfect subjects for early photography precisely because their whiteness and stillness helped compensate for weak emulsions. Those two photogenic qualities were often decidedly absent from Calder's sculptures. Long exposures—such as for Vaux's photographs of an untitled and lost mechanized

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This has never been shown anything all to the prices

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mobile (c. 1932) and of *Machine motorisée* (1933)—create not precision, but blur. Yet what appears to be a quotidian blur—the photographic trace of rapid movement—proves to be anything but, in Vaux's disquieting images.

Vaux's two photographs are among the few extant traces

of a lost and untitled mechanized mobile comprising, in the words of one reviewer, "two slightly quivering sticks surmounted with balls, might be the controls of a vibrating airplane or automobile." 15 The photographs and the description seem to point toward a human-machine interface in which movement is a byproduct of excessive mechanical motion, rather than its seamless perfection, like the slight quiver of the frame in (pre-digital) cinematic projection or the rumble of a car or plane in motion. A second reviewer similarly identified the rapid vibrations endemic to the machine age (albeit redolent with Greek antiquity): "There are two simple sticks, one white and one black, which are driven by a hidden motor that buzzes like a hive; all of which recalls the approach of the Maenads. The sticks vibrate, rise up, almost meet, then fall away from each other, with the grace, uncertainty and timidity of rudimentary, schematic beings. The observer is mesmerized by them."16 Rather than transmit to us the nature of the mobile's movement, photographer and reviewers, images and texts, have waged an inadvertent conspiracy. Despite all appearances, the motion of the untitled mobile is glacial—as revealed by two separate sources in the archive. In a 1936 letter to curator Paul Nash detailing works for potential inclusion in an upcoming exhibition, Calder diagrams and explicates the motion of the still-untitled mobile: "The white sphere + stick make 3 revolutions (vert. axis) while the black move up and down 5 times (all very slow)" ¹⁷ (fig. 13). How slow? A short film by French filmmaker and sometime Surrealist Jean Painlevé proves decisive, despite the short length of the relevant shot (not quite a half-minute). In contrast to the rapid movement implied by Vaux's photograph,



Marc Vaux
Machine motorisée set in motion, 1933

the two sticks surmounted by spheres approach each other with aching trepidation only to retreat to their own domains at a ponderous crawl. Indeed, their movements are so slow that it is difficult to discern their spatial coordination: Only Calder's explication clarifies two entirely distinct motions: revolution (white) versus rise and fall (black). (The same ambiguous temporality is evident in Vaux's photograph of *Machine motorisée*—only here the glacial movement and forced contact take on a decidedly erotic dimension [p. 136].)

Vaux's long-exposure photographs can therefore be interpreted in two distinct ways. The first is as a diagram of motion, not unlike the motion studies of Marey and his followers, in which movement is reduced to graphic notation (Marey's famous "graphic method"). In this reading, Vaux's photograph performs the same operation as Calder's later hand-drawn diagram: It traces a movement divorced from direct human perception. A second interpretation, however, is at once more sensually immediate and more alienating. For the Vaux photographs to maintain their tenuous relationship to human perception, we must imagine an observer whose sensorium is decelerated to such an extent that he or she perceives even sluggish motion as a blur. If cinematic slow and accelerated motion often serves as an anthropomorphizing machine, one that translates nonhuman registers of movement into a human scale, Vaux's photographs like the contemporaneous theories by biologist Jakob von Uexküll and his many philosophical followers—introduce nonhuman temporal scales into the perception of Calder's kinetic sculptures. Uexküll's 1934 description of the perception of a snail is apt in its grand claims (the multiplicity of time scales anchored in specific physiologies) and in the precise configuration of the experiment (vibrating sticks):

A snail [Helix pomatia] is placed on a rubber ball which, because it is floating on water, can slide freely past beneath the snail. The snail's shell

is held in place by a clamp. The snail is thereby free to crawl and also stays in the same place. If one places a small stick at the foot of the snail, it will crawl up on it. But if one strikes the snail from one to three times a second with it, the snail will turn away. However, if the blows are repeated four or more times a second, the snail begins to crawl onto the stick. In the snail's environment, a stick that moves back and forth four or more times a second must be at rest. We can conclude from this that the perception time of the snail takes place at a speed of between three and four movements a second. This has as a result that all processes of motion take place much more quickly in the snail's environment than they do in our own. Even the snail's own movements do not seem slower to it than ours do to us.¹⁸

Vaux's photographs of a mechanized mobile do not partake in Moholy-Nagy's teleological dematerialization of sculpture. They are closer to an experiment by Uexküll, one in which human perception is decelerated to that of a snail. A single encounter with Calder's mobiles is enough to see them morph into animals, machines, natural elements, and abstract metallic shapes. As Sartre recounted: "My bird flies, floats, swims like a swan, like a frigate. It is one, one single bird. And then, suddenly, it breaks apart and all that remain are rods of metal traversed by futile little tremors." This much the sculptures tell us directly. However, only in photographs like those of Vaux are the little tremors revealed to be the relics and the promise of an nonhuman perception.



Marc Vaux

Untitled set in motion, c. 1931 Verso of *Untitled*, c. 1931, with notations by Calder

Endnotes

- 1 On Matter's photographs of Calder, see Alexander S. C. Rower, ed. Calder by Matter (Paris: Cahiers d'Art, 2013).
- 2 See, for example, Roxana Marcoci, ed. The Original Copy: Photography of Sculpture 1839 to Today (New York: Museum of Modern Art, 2010); Sarah Hamill and Megan R. Luke, eds., Photography and Sculpture: The Art Object in Reproduction (Los Angeles: Getty Research Institute, 2017). Symptomatically, Calder figures centrally in recent anthologies on sculpture and film. See, for example, Steven Jacobs et al., Screening Statues: Sculpture and Cinema (Edinburgh: Edinburgh University Press, 2017); Jon Wood and Ian Christie, eds., Sculpture and Film (New York: Routledge, 2019).
- Elizabeth A. Brown, Brancusi photographs Brancusi (New York: Thames & Hudson, 1995), 4. On Brancusi's photographs and films of his own sculptures, studio, and milieu, see especially Quentin Bajac, Clément Chéroux, and Philippe-Alain Michaud, Brancusi, film, photographie: images sans fin (Paris: Centre Pompidou, 2011).
- Brown, Brancusi photographs Brancusi, 5.
- Calder and Smith overlapped at the 1962 Festival of Two Worlds in Spoleto, Italy, where their works were photographed successfully by Ugo Mulas. See Sarah Hamill, "Ugo Mulas and the Photography of Modern Sculpture," in Alexander Calder/David Smith (Zurich: Hauser & Wirth, 2017), 29-40.
- 6 "Picturing Autonomy: David Smith, Photography and Sculpture," Art History 37, No. 3 (2014): 536-65.
- See Quentin Bajac, "The Search for Ubiquity: Calder and the Reproduction of His Works, 1927-32," in Alexander Calder: The Paris Years, 1926–1933, ed. Joan Simon (New Haven: Yale University Press, 2008), 189-92.
- Pedro E. Guerrero, "A Note on the Photographs," in H. H. Arnason, Calder (Princeton: Van Nostrand, 1966).
- See Heinrich Wölfflin and Geraldine A. Johnson, "How One Should Photograph Sculpture," Art History 36, No. 1 (2013): 52-71.
- 10 László Moholy-Nagy, Vision in Motion (Chicago: Paul Theobald, 1947), 237. For an alternate take on this trajectory, see Rosalind Krauss, Passages in Modern Sculpture (Cambridge, Mass.: MIT Press, 1977), 213–20. Like Moholy-Nagy, Krauss relies on Matter's stroboscopic photographs to make her argument.
- 11 Moholy-Nagy, Vision in Motion, 240.

- 12 Ibid.
- 13 Importantly, Warhol shot his "stillies" at 24 frames per second but projected them at 18 frames per second, thereby further reducing the already limited movement.
- 14 In homage to Bragaglia, the Futurist champion of the photography of movement, we might call them "Photo-movement-istics," "Photocinematics," or simply "Photodynamism." See Anton Giulio Bragaglia, "Futurist Photodynamism," trans. Lawrence S. Rainey, Modernism/ Modernity 15, No. 2 (2008): 364.
- 15 Waverley Lewis Root, "Calder Makes Some New Gadgets, Puts 'Em on Exhibit," Chicago Tribune (Paris edition), February 1932.
- 16 Paul Recht, "Dans le movement, les sculptures mouvantes." Mouvement, No. 1 (June 1933): 48-49. Translation by H. Harvard Arnason in Calder (New York: Viking Press, 1971), 29.
- 17 Alexander Calder to Paul Nash, May 14, 1936, Calder Foundation archives.
- 18 Jakob von Uexküll, A Foray into the Worlds of Animals and Humans: Picture Book of Invisible Worlds (1934), 72, quoted and discussed in Inga Pollmann, "Invisible Worlds, Visible: Uexküll's *Umwelt*, Film, and Film Theory," Critical Inquiry 39 (2013): 799–800.
- 19 Jean-Paul Sartre, "Les Mobiles de Calder," in Alexander Calder: Mobiles, Stabiles, Constellations, exh. cat. (Paris: Galerie Louis Carré, 1946). Translation by Chris Turner, The Aftermath of War: Jean-Paul Sartre (Calcutta: Seagull, 2008), 358-59.