

Picabia and Calder

# A Trajectory

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Calder's works achieve an "aesthetics of movement" that the Futurists had formulated in their theories, a direction suggested by the works of a few isolated individuals such as Picabia and Marcel Duchamp.<sup>1</sup>  
—Gabrielle Buffet-Picabia, 1932

<sup>1</sup> Gabrielle Buffet-Picabia, "Alexander Calder, ou le roi du Fil de Fer," *Vertigral 1* (July 15, 1932), translated in *Calder: Gravity and Grace*, eds. Carmen Giménez and Alexander S. C. Rower (London: Phaidon, 2004), p. 66.

## 1.

A 1940 photograph by Herbert Matter shows Alexander Calder's New York studio in its usual disarray.<sup>Fig. 1</sup> As opposed to the spare, floating, almost virtual sculptural work for which he is known, Calder's studios were notorious for their clutter, with desks and tables piled high with so much material stuff overflowing onto every surface and the floor, with works of all periods coiled up, in storage, in tight agglomerations. We are peering, it seems, into a corner, pressed hard against this liminal space, and several recent works—mobiles and stabiles both—are recognizable, like **Sphere Pierced by Cylinders** (1939) or **The Spider** (1940). Seen in this compressed way, Calder's wire works and cut metal planes overlap in profusion, an array of line, shape, and shadow far more extreme than the photographs of cast shadows that Marcel Duchamp once created of his readymades in the studio almost twenty-five years before. Given the organic metaphors that often descend upon Calder's productions, we seem to stare at the sculptural equivalent of a spider's web, a system of pulsing capillaries, or an overgrown swamp, an impenetrable jungle. For translated into the realm of the image, the flattened lines of Matter's photograph transform Calder's studio into the birthplace of a graphic tangle, a complex linear network.



Fig. 1 Alexander Calder's New York City storefront studio, 1940. Photograph: Herbert Matter.

## 2.

Embracing Calder's central aesthetic principle, the procedure of jarring heterogeneity that the artist named "disparity," Fernand Léger once wrote of Calder in a manner that rhymes with Matter's photograph of the sculptural work knotted up in the studio. "It would be difficult to find greater contrast between two things," the painter noted, "than between Calder, who weighs 220 pounds, and his slender, gossamer mobiles. Calder is something like a walking tree trunk, displacing a lot of air as he moves, and blocking the wind."<sup>11</sup>

## 3.

It is the teeming network captured by Matter's photograph, its clog of overlapping line racing in every direction, that brings to mind Francis Picabia. The art historian Yve-Alain Bois might call the comparison a "pseudomorphism." But by 1931–32, the moment of the initiation of Calder's mobiles and his "mature" sculptural career, Picabia was just bringing to completion the four-year journey of those paintings now called the **Transparencies**. And here, in these canvases, we witness a similar aesthetic of overlapping line, the traced contours of more-or-less recognizable image fragments copied from Catalan frescoes and Old Master paintings—combined and layered in hermetic confusion, over prematurely-aged grounds, varnished and sickly colored, cracking before their time, like so many memories that have not yet occurred. Widely accepted as Picabia's most melancholic works, the **Transparencies** otherwise seem far from Calder's aesthetic of invention and child-like play. And usually interpreted as Picabia's excessive and grotesque commentary on (parody of) the anti-modernist turn of French art in the 1920s—the return to figuration, classicism, and pictorial "order"—the **Transparencies** tack directly opposite to Calder's abandonment of the figure by the late 1920s, his adherence to the newest forms of abstraction by the early 1930s. Stylistically, the works speak different tongues.

<sup>11</sup> Fernand Léger, "Calder," *Derrière le miroir* 31 (Paris: Fondation Maeght, 1950), translated in Calder: *Gravity and Grace*, p. 71. For Calder on disparity, see Alexander Calder, "A Propos of Measuring a Mobile" [1943], in Calder: *Gravity and Grace*, pp. 50–51.

But structurally: the **Transparencies** are paradoxical. For in fact, they are not transparent. Like Matter's photograph of Calder's wire sculptures, the **Transparencies** enact an aesthetic pile-up, a formal heap of layered images. And if they tarry with anti-modernism, they do so in forms long recognized as indebted to the cinema and its procedures, to collage and its disparate juxtapositions, to the Dada readymade and its principles of anti-creation and re-use.<sup>111</sup>

<sup>111</sup> The cinematic reading of the *Transparencies* was immediate; see Gaston Ravel, "Exposition de peinture," *La Critique cinématographique* (October 29, 1929), cited in William Camfield, *Francis Picabia: His Art, Life, and Times* (Princeton, NJ: Princeton University Press, 1979), p. 233. See also Sarah Wilson, "Accommodations of Desire: Picabia's *Transparencies*," in *Francis Picabia: Transparencies 1924-1932* (New York, NY: Kent, 1989), pp. 5-29.

We can, however, go further. Clearly, in the **Transparencies**, line is at stake, as it always was for Picabia. In the so-called **Portrait of Madame Picabia** (1927-30), for example, circles and lines race aimlessly around the traced contours of praying hands, clasped hands, gesturing hands, and a face; the lines are thick, and black; or white, and faded; and twist in decorative arabesques, or spin in rotating spirals, or reach like vectors to the painting's edge. The **Transparencies** continue Picabia's life-long reworking of line—traced, copied, and transposed—and thus perhaps amount to a direct but disguised continuance, even a survival, of the most radical work of his Dada period, his mechanical drawings. And if Picabia's line lives on in the so-called anti-modernism of the **Transparencies**, we might challenge the simple "return-to-order" narrative, and its logic of the copy and of pastiche, which has been seen as the work's central contribution.

Rather than a "return" to figuration, the **Transparencies** of Picabia do something to figuration. Rather than render figuration simply readymade, robotic, or automated, the **Transparencies** perform an operation on the painterly figure, mounted through a specific kind of line. This is an operation that repeatedly **connects** lines and bodies both, linking them, layering figurative images one atop the other, attaching their various forms. If the result often verges on the unreadable—see, for example, **Sphinx** (1929)<sup>Fig. 11</sup>—we are not surprised to witness Picabia's "figuration" entering the hermetic realm we normally conceive of as belonging to the abstract. It is as if figuration here becomes excessive, and in its profusion almost cancelled out—linked with its other, its negation, the inscrutable and non-representational space of abstraction. The **Transparencies** perform a linkage of forms, embodying a linear network dressed up as Old Master figuration, bodies hooked up to other bodies. It is this linkage, this connection of forms, that—not coincidentally—names the trajectory that connects Calder and Picabia.



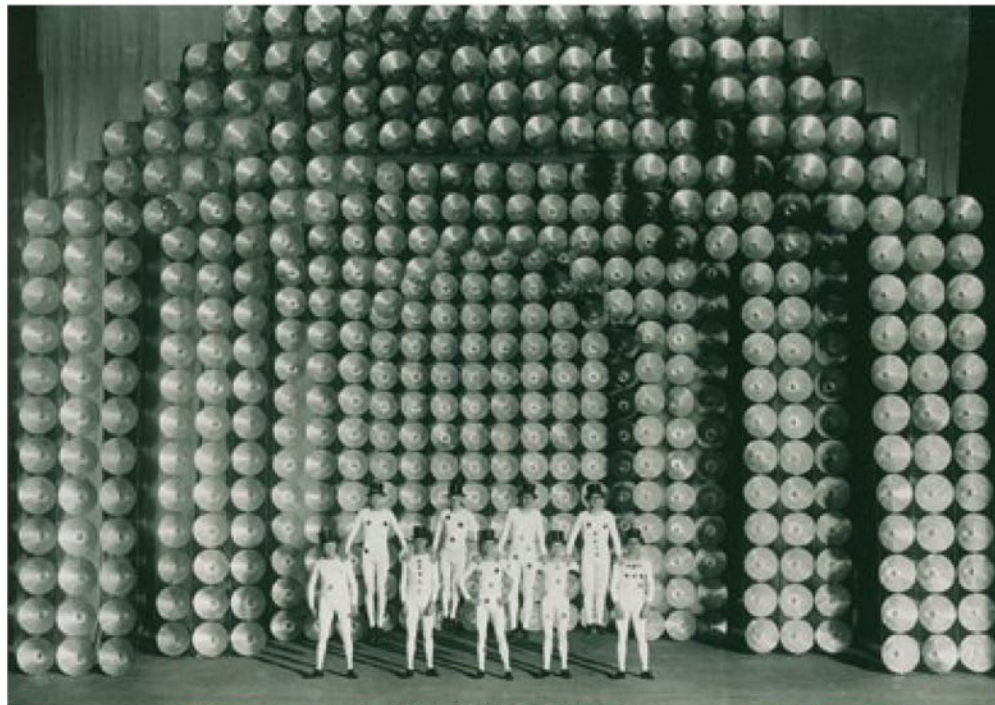
<sup>Fig. 11</sup> Francis Picabia, *Sphinx*, 1929. Musée National d'Art Moderne—Centre Pompidou, Paris.



4.

The concrete meeting places of Calder and Picabia are few and far between. In art history, one of the few serious attempts to compare the two figures occurs in a now-classic text, the critic Rosalind Krauss's **Passages in Modern Sculpture** (1977).<sup>iv</sup> In preparing a discussion of Minimalism and postwar kinetic sculpture, and of the theatrical and performative nature of such sculptural work, Krauss looks back to Calder's mobiles, linking them to Picabia's own prior engagement with the theater, his ballet made in collaboration with Erik Satie entitled **Relâche** (1924).<sup>Fig. III</sup> Focusing on the ballet's set design, a wall of automobile headlights that Picabia positioned like an anti-curtain behind the performers, a screen of circular lamps that burst into illumination in keeping with the changes of volume in the musical score, Krauss sees Picabia's ballet as an attempt to assault the audience, to "incorporate" and "assimilate" it by lighting it, connecting the stage and its surrounding theater space, linking the performance and the spectator, undoing the boundaries between the space of art and the space of the world or the real.

<sup>iv</sup> Krauss's book is better known for a different comparison of two artists normally considered as disparate and unrelated in formal or stylistic terms, namely Marcel Duchamp and Constantin Brancusi. See Rosalind Krauss, "Forms of Readymade: Duchamp and Brancusi," in *Passages in Modern Sculpture* [1977] (Cambridge, MA: MIT Press, 1993), pp. 69–103.



<sup>Fig. III</sup> Image of the performance and set of Francis Picabia, Erik Satie, and the Swedish Ballet, *Relâche*, 1924. Dansmuseet, Stockholm.

For this critic, Calder's mobiles are instead human-like actors that preserve themselves in a space apart—a space above—linked to a Constructivist or analytic perspective.<sup>v</sup> But in the photographs that illustrate the art historian's account, Calder's works are represented by high-contrast, stop-motion images made (once again) by Herbert Matter,<sup>Fig. IV</sup> with the mobiles' various disks glowing intensely against a space of pitch darkness and tracing brilliant dotted trajectories through the air.

<sup>v</sup> Krauss seems here to internalize the critic Clement Greenberg's negative judgment of Calder's sculpture, a position I have contested in my prior writing on Calder's work. See Krauss, "Mechanical Ballets: Light, Motion, Theater," in *Passages in Modern Sculpture*, pp. 201–42.



Fig. IV Alexander Calder's  
*Untitled* (1936)  
 set in motion, ca. 1939.  
 Photograph:  
 Herbert Matter.



<sup>vii</sup> For the catalogue essay for Calder's first Paris exhibition as an "abstract" artist, the Galerie Percier show in 1931, Léger significantly linked Calder to Duchamp, Arp, Brancusi, and Erik Satie (along with Mondrian for good measure). See Léger, "Eric Satie Illustrated by Calder," in *Alexander Calder: Volumes — Vecteurs — Densités — Dessins — Portraits* (Paris: Galerie Percier, 1931), collected in *Calder: Gravity and Grace*, p. 65. While hardly any recent accounts of Calder's work have stressed its relationship to Dada, one of the most important writers on Calder's work during the artist's lifetime, the curator James Johnson Sweeney, stressed precisely this legacy: "As a consequence of this underlying parody of human and animal movements, [Calder's] machines had perhaps a closer relationship with dada and futurism than with constructivism. The resemblance between Calder's Galerie Percier 'volumes, vectors and densities' and early constructivist work was evident. But while constructivism was a calculated, unemotional expression, dada was a laughing iconoclasm based on the belief that a healthy art could only flourish if the conventional trappings and false seriousness of art were stripped away. Dada was an outgrowth of Italian futurism. The futurists had preached the importance of incorporating movement as an esthetic factor. Art had too long been static. The modern world was a world of movement. Modern art should embody it. Duchamp and Picabia, in their interest in the representation of movement and the satirical use of machine forms, effected a link between futurism and dada in such work as Duchamp's *The King and Queen Crossed by Swift Nudes* and Picabia's *The Infant Carburetor*. The spirit of Calder's new machines was certainly closer to such work than to that of the Russians." James Johnson Sweeney, *Alexander Calder* (New York, NY: Museum of Modern Art, 1951), p. 32.

Represented in this way, Calder's mobiles rhyme with—more than differentiate themselves from—Picabia's wall of circular headlights. And to the extent that Picabia's performance was a reworking of the thematics and form of Marcel Duchamp's **The Large Glass** (or **The Bride Stripped Bare by Her Bachelors, Even**) (1915–23) <sup>Fig. V</sup>—borrowing its characters and thematics of erotic strip tease as the primary events of the ballet—the Calder mobiles beg to be seen in this connection as well. <sup>vi</sup> They beg to be seen as formed by, and as forms of, connection—like the transparent window of **The Large Glass** that opened the great Dada work to its surround, or the wall of light that for Picabia paradoxically lit his spectators, linking his performance to its audience. The dotted lines in Matter's photographs of Calder's work hardly trace analytic or virtual volumes, Constructivist ideal structures. They instead invoke the representational form of Duchamp's machinist fantasy, of Picabia's excessive translation of **The Large Glass** into dance. Spinning, spiraling, swirling in every direction, they invoke yet another network of lines, with moving vectors and trajectories pushing out into space—the forms of linkage and connection that Dada had long ago made its own.

## 5.

Art history has mostly turned a blind eye to the actual origins of Calder's aesthetic, one far afield from the landscape of abstract modernism. It is as if speaking in an abstract tongue, Calder's work dissimulates from where his abstraction actually emerges. We need to undo a historiographical repression. <sup>vii</sup> For everything militates against locating this origin point in the formative visit Calder paid to the studio of Piet Mondrian in 1930, deciding to produce "abstract" work in this visit's wake. Such is the story that every historian seizes upon in announcing the onset of Calder's mobiles. But Calder's mature sculpture seemed to originate in relationship to a very different set of artists. These were the artists who, notoriously, named his practice; who **recognized** it, we might say: Marcel Duchamp and Jean Arp. It was Duchamp who christened the "mobiles"; it was Arp, slightly later, who called Calder's stationary works "stables." <sup>viii</sup> It is a recognition that forces us to consider the links between Calder's work and Dada. <sup>viii</sup>



Fig. V Marcel Duchamp,  
*The Bride Stripped Bare by  
 Her Bachelors, Even*  
 (*The Large Glass*) (front  
 view), 1915–23. Philadelphia  
 Museum of Art.

<sup>vi</sup> I read *Relâche* as a performance based on *The Large Glass* in my book on Picabia, *The Artwork Caught by the Tail: Francis Picabia and Dada in Paris* (Cambridge, MA: MIT Press, 2007), pp. 289–337.

<sup>vii</sup> I have attempted to connect Calder to the most radical forms emerging from both the Dada and Surrealist avant-gardes in my essay "Calder's Mobility," in *Alexander Calder and Contemporary Art: Form, Balance, Joy*, ed. Lynne Warren (Chicago, IL: Museum of Contemporary Art, 2010). I reprise and expand upon the Dada section of that essay in what follows.

## 6.

What would it mean to associate Calder and Dada? If Dada's contribution to modern sculpture can be summed up with Duchamp's word "the readymade," the connection to Calder's work would seem severely attenuated. Nothing could be further from Calder's aesthetic—no matter his engagement in the 1930s and 1940s with material we might call "found objects"—than the non-production, the anti-production, of the readymade. The majority of Calder's early works are instead jerrybuilt; they showcase the obsessive labors of a tinkerer, being resolutely if intuitively handmade, the products of the workshop and the tool shed.<sup>ix</sup> And yet Duchamp focused on something else about Calder's work when he shared with his new friend the word "mobile," a term he had previously applied to his own moving objects (some of them readymades).<sup>x</sup> He focused on the unclassifiable nature of Calder's "line": "Calder's line was so distant from any established formula, that there was a need to invent a new name for his forms in motion."<sup>xi</sup> Line points away from the readymade and toward Duchamp's and Dada's **images**—to works like Duchamp's **The Large Glass** or Picabia's "mechanomorphs"—and thus to what has been called Dada's engagement with the "bachelor machine."

<sup>ix</sup> It should be noted however, that for all his purported "laziness," Duchamp worked with an obsessive tinkerer's energy on many of his projects, such as *The Large Glass*. The work involved what I have elsewhere called a "dialectic of indolence and industry," the latter aspect of which Calder evidently appreciated: "He used to work like hell," Calder once said of Duchamp. See Robert Osborn, "A Conversation with Alexander Calder," *Art in America* 57 (July–August 1969), collected in *Calder: Gravity and Grace*, p. 100.

<sup>xi</sup> Marcel Duchamp, "Alexander Calder: Sculptor, Painter, Illustrator," from the Société Anonyme catalogue (1950), collected in *Calder: Gravity and Grace*, p. 77.

<sup>xii</sup> Michel de Certeau, "The Arts of Dying: Celibatory Machines," in *Heterologies: Discourse on the Other* (Minneapolis, MN: University of Minnesota Press, 1986), p. 156. The primary account of the bachelor machine within modernism is Michel Carrouges, *Les machines célibataires* [1954] (Paris: Chêne, 1976).

## 7.

As imagined in Duchamp's **The Large Glass**, a bachelor machine contemplates an impossible fusion between bodies and machines. Duchamp's spinning "water mill," his "chocolate grinders," his "malic molds": a bachelor machine operates a logic of conjunction that will never be achieved—the interpenetration of body and machine, the bachelors seeking erotic union with their "bride"—a combination that cannot be resolved. They are machines that thus allegorize states of hybridity and incompleteness. Bachelor machines are also consequently engines of perpetual motion. Their frustrated drive toward erotic fusion produces both failure and violence—an endless inscription, a kind of "writing," as Michel de Certeau has asserted, that is also a form of self-abnegation, a ceaseless "torture."<sup>xii</sup> Endlessly spinning, endlessly connecting, endlessly producing, the bachelor machine achieves only a wayward drift. Duchamp composed for them a hymn that he called his "Litanies of the Chariot," the bachelor machine's incessantly repeated chant: "Slow life. Vicious circle. Onanism. Horizontal. Round trip for the buffer. Junk of life. Cheap construction. Tin, cords, iron wire. Eccentric wooden pulleys. Monotonous fly wheel. Beer professor."<sup>xiii</sup>

<sup>x</sup> Duchamp sometimes referred to his first readymade, the moving *Bicycle Wheel* of 1913, by the name "mobile." Others of the readymades were suspended in the air, like the *Hat Rack* of 1917, and Duchamp would go on in the 1920s to construct a variety of rotating devices like the *Rotative Demisphere* of 1924. Man Ray's reactions to Duchamp's mobile or suspended readymades were also an important precedent for Calder, from the photographer's image of clothes billowing in the wind entitled *Moving Sculpture* of 1917—a specific reaction by Man Ray to the "Draft Pistons" section of Duchamp's *The Large Glass*—to his suspended assisted readymades *Obstruction* (1920, an accumulation of clothes hangers branching out in space) and *Lampshade* (1919, a hanging spiral made from an eviscerated lampshade). Man Ray also continued to produce moving sculptures in the 1920s, most importantly the work *Object to Be Destroyed* (1923).

<sup>xiii</sup> Marcel Duchamp, "The Green Box," in *The Writings of Marcel Duchamp*, eds. Michel Sanouillet and Elmer Peterson (New York, NY: Da Capo, 1973), p. 56.

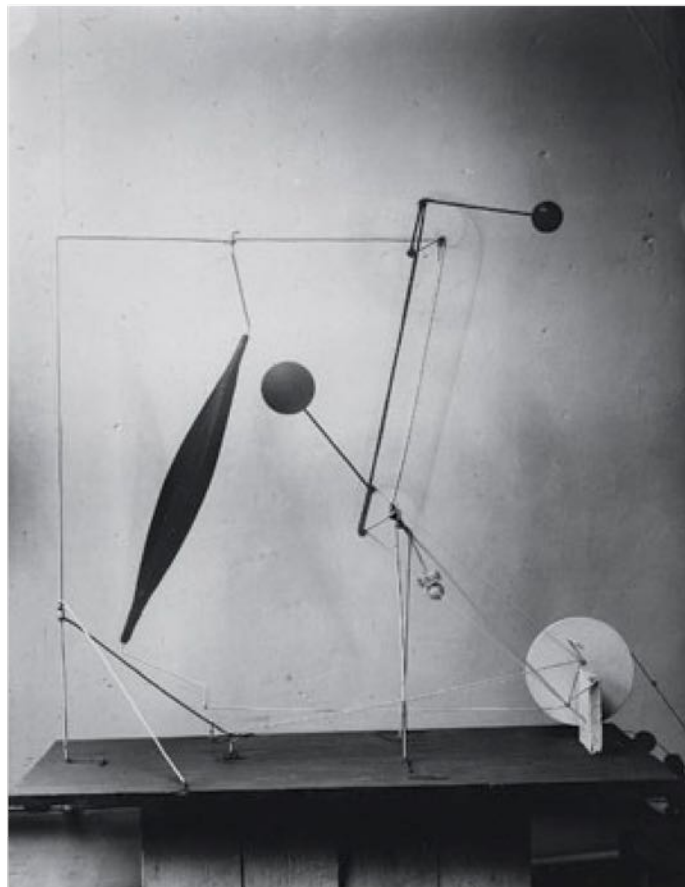


8.

Inasmuch as Duchamp's litanies could serve as an uncannily precise theme song for Calder's early sculpture, we sense the continued presence of the bachelor machine throughout the artist's production of the 1930s and 1940s—especially in his first two "abstract" shows, the 1931 Galerie Percier exhibition entitled **Volumes–Vecteurs–Densités**, and the 1932 exhibit arranged by Duchamp at the Galerie Vignon, **Calder: ses mobiles**. We sense it in the descriptions by Calder and others of his early mobiles as "messy," "sputtering" machines, machines that he called his "babies," machines described by others as "useless" and that often broke down.<sup>xiv</sup> We sense it in the pointless spinning of mobile after mobile, rotated at first by a hand-crank or a homegrown motor and pulleys. But we also sense the bachelor machine's proximity in the violent confrontations of Calder's earliest mobiles—the **Untitled** mobile usually called "the motorized mobile that Duchamp liked" from 1931<sup>Fig. VI</sup> or its twin, **Dancing Torpedo Shape** (1932)—that imagined geometric shapes, spheres and squares, encountering a dancing spindle associated with a torpedo, an evocation of weapons, war, and violence. We sense the bachelor machine's continuance in the hangman's gallows that is the suicidal or murderous structure Calder entitled **Object with Red Ball** (1931). We sense it even in many of the earlier "stables" of the so-called constructivist Galerie Percier exhibition.

<sup>xiv</sup> See Alexander Calder in *Calder: An Autobiography with Pictures*, ed. Jean Davidson (New York, NY: Pantheon, 1966), p. 127; Calder, cited in "Objects to Art Being Static, So He Keeps It in Motion," *New York World-Telegram*, June 11, 1932, collected in *Calder: Gravity and Grace*, p. 48; and Gabrielle Buffet-Picabia, "Alexander Calder, ou le roi du Fil de Fer," in *Calder: Gravity and Grace*, p. 66: "In the 'Room of Useless Machines,' 5, 8, 10 Mobiles buzz, driven by small motors and transmission belts."

<sup>Fig. VI</sup> Alexander Calder, *Untitled (The motorized mobile that Duchamp liked)*, 1931. Photograph: Marc Vaux. Bibliothèque Kandinsky, fonds Marc Vaux, Musée National d'Art Moderne – Centre Pompidou, Paris.



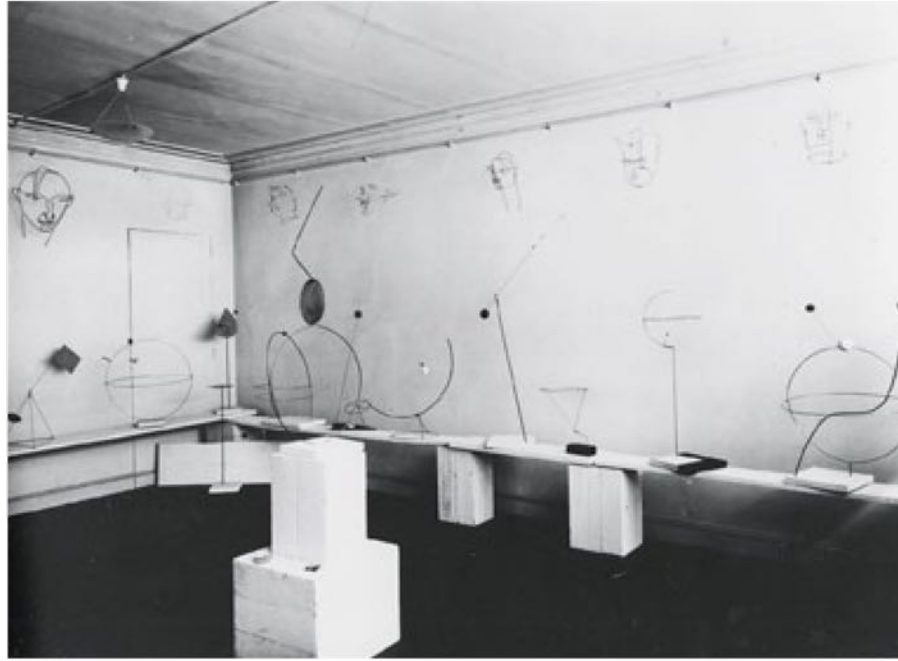


Fig. VII Installation photograph,  
 Alexandre Calder:  
 Volumes-Vecteurs-  
 Densités / Dessins-Portraits,  
 Galerie Percier, Paris, 1931.  
 Photograph:  
 Marc Vaux. Bibliothèque  
 Kandinsky, fonds Marc Vaux,  
 Musée National  
 d'Art Moderne – Centre  
 Pompidou, Paris.

## 9.

It would be better to understand the Percier exhibition as a kind of Constructivism unraveled, its language of virtual and purely abstract “drawing in space” undone. Consider the quivering waywardness of **Gémissement Oblique** (1931)—a title meaning “oblique moaning” or “groaning,” associating the structure’s nervous swaying and pointless reaching with either unfulfilled or unruly sexual desire.<sup>xv</sup> Along these lines, we sense the bachelor machine’s presence in the phallic inevitability of Calder’s dancing torpedo shapes, or the erect supplements he added to earlier stabiles such as **Spherique I** (1930), also erroneously known as **Pistil**, a half-circle that evokes an open flower and its pistil or stamen, a gaping mouth and uvula, or a phallic bodily protrusion all at once. Usually these angled lines and spheres are understood in terms of Calder’s interest in planets and geometry, as solar systems and model universes, but the sexualized, bachelor machine reading of the first stabiles is always there, shadowing the objects. It is there along with the older figurative wire caricatures that Calder hung above each of his new “abstract” sculptures in the Galerie Percier exhibition,<sup>Fig. VII</sup> like another version of Duchamp’s *Bride* above and her *Bachelors* below, the body and abstraction working against each other, undoing each other’s boundaries.<sup>xvi</sup> And so we sense the human, bodily characteristics of the supposedly “abstract” Calder constructions, the bachelor machine in another guise—as **Croisière** (1931), for example, sprouts spheres attached to its circular form like antennas, reaching out into space in search of connection; and Calder’s other spherical abstracts evoke open eyes, or gaping orifices. Phallic reachers or inviting cavities, Calder’s open form “constructions” have been infiltrated by a bachelor machine eroticism. The sculptures are thus irremediably hybrid, abstract and figurative, constructivist and Dadaist at the same time.

<sup>xv</sup> Years later, in his beautiful essay of the 1940s, Jean-Paul Sartre would describe the inanity of some of the movements of Calder’s mobiles, their periodic structural decomposition: “At moments they seem endowed with an intention; a moment later they appear to have forgotten what to do, and finish by merely swaying inanelly. My bird, for instance [Sartre was given the mobile *Peacock* by Calder in the 1940s], can fly, swim, float like a swan or a frigate. It is one bird, single and whole. Then all of a sudden it goes to pieces and is nothing but a bunch of metal rods shaken by meaningless quiverings.” See Sartre, “The Mobiles of Calder,” in *Alexander Calder: Mobiles, Stabiles, Constellations* (Paris: Galerie Louis Carré, 1946), collected in *Calder: Gravity and Grace*, pp. 70–71.

<sup>xvi</sup> These older works by Calder, now abandoned for abstraction, have usually been described as placed in the Galerie Percier exhibition as a concession to the dealer and to the need for sales. But the caricatures’ emphatic placement directly above each new construction creates a pointed set of relations, and a structure too reminiscent of the abstract/figurative divide of *The Bride Stripped Bare* by *Her Bachelors*, Even to be entirely accidental.



<sup>xvii</sup> On Calder's familiarity with and interest in the pantographs used in his father's academic studio practice, see Joan M. Marter, *Alexander Calder* (Cambridge: Cambridge University Press, 1991), pp. 12–13.

Or consider **Pantograph** (1931).<sup>Fig. VIII</sup> Motorized and mobile, the work's circles and shifting parallelograms refer to a specific machine. A "pantograph" is a device used to produce a mechanical copy, amplifying a given example of writing or visual form into another reiterated version of the same.<sup>xvii</sup> Calder's bachelor machine gambit is to transform this "copying" device into an "abstract" work, relaying a machine for inscription into a visual object, a technology of the multiple into abstraction's proclamation of singularity: an experience of what the artist might call "disparity" indeed.<sup>xviii</sup> And the circuit so devised provokes another resonance: a "pantograph" can also refer to a different mechanical device, the wire connectors that attach a moving train, for example, to an electrical power source above it. The mobile as a relay, a connector, an articulated joint between a machine and its source of energy: this resonance is crucial, both within Calder's earliest mobile constructions, and into his later suspended works. For here, we sense the bachelor machine's continuance within Calder's work in precisely the place Duchamp sensed it: in Calder's "line."

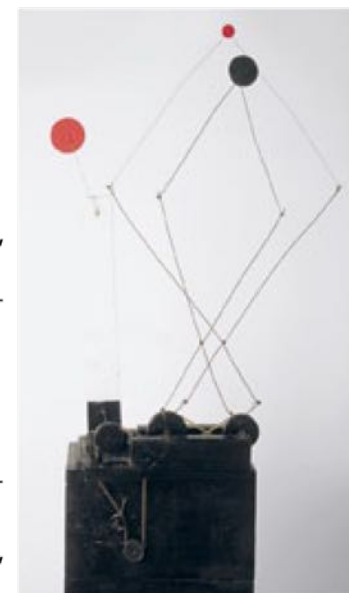


Fig. VIII Alexander Calder, *Pantograph*, 1931. Moderna Museet, Stockholm.

<sup>xviii</sup> This is precisely the paradoxical logic of Picabia's "last mechanomorphs" of 1922, on which see section 13 in the text.

## 10.

Another connection, an oblique one, between Calder and Picabia: at the time of Calder's first exhibition of his mobiles, at the Galerie Vignon in 1932, the artist had come to know Picabia's first wife, the musician and writer Gabrielle Buffet. After an introduction from Duchamp's partner Mary Reynolds, Buffet in fact lived in Calder's home for a short period of time during the artist's absence.<sup>xix</sup> She would write one of the first, and most perceptive, accounts of the mobiles that we have. Predicting Léger's later emphasis on the disparity between Calder's imposing physique and the weightless art he came to create, Buffet begins her essay by observing that Calder was built to work marble and granite, but instead has come to create sculpture with a single material, namely wire. The word "material," Buffet then insists, is not quite right, as Calder's works seem to "exclude" matter, their only true element being, in the critic's words, "movement." Calder, she writes, "is gifted with a sense for movement like others are for poetry or music." This becomes the central claim of Buffet's initial reaction to the mobiles: that Calder inherits and extends an "aesthetics of movement" initiated earlier in the twentieth century by the Futurists, and by Picabia and Duchamp.<sup>xx</sup>

Not surprisingly, one of the resources for Buffet to think this dedication to movement comes from a comparison of Calder's sculpture to her own domain of music—durational, successive, full of the "play of counter-point." In Picabia's earlier development, Buffet's experience as a musician had in fact been crucial. The painter's first "abstract" canvases of 1911–14, the work the poet Guillaume Apollinaire christened "Orphism," followed

<sup>xix</sup> The year 1932 was actually the moment of Picabia and Buffet's official divorce after over a decade of separation (Picabia was well-known for remaining close to all of his former partners throughout his life however). Calder describes Buffet-Picabia's stay in his home in *Calder: An Autobiography with Pictures*, pp. 137–41. Buffet-Picabia describes in detail her memories of the "alterations" Calder made to his living space in "Sandy Calder, forgeron lunaire," *Cahiers d'art* [1945], reprinted in Gabrielle Buffet-Picabia, *Recontres avec Picabia, Apollinaire, Cravan, Duchamp, Arp, Calder* (Paris: Pierre Belfond, 1977), pp. 135–42.

Both close to Duchamp in terms of love relationships, Mary Reynolds and Buffet continued their own close friendship to the end of Reynolds's days (she died in 1950 of cancer; Buffet would live on to the age of 104). Most extraordinary, they worked in the same Resistance cell during the Nazi occupation of Paris, with Reynolds's code name being "Gentle Mary." Samuel Beckett also worked alongside the two women at this time. Calder himself would clearly remain close to Reynolds too until the end of her life; there are some charming drawings by his hand of Reynolds and her many cats in the 1940s.

<sup>xx</sup> Buffet-Picabia, "Alexander Calder, ou le roi du Fil de Fer," in *Calder: Gravity and Grace*, p. 66. I am loosely retranslating myself from Buffet-Picabia's original here.

what has been called a “musicalist” aesthetic, a set of lessons taught to Picabia by Buffet herself. And that musicalist dimension not only claimed a space of non-representation that the medium had long promised to the visual arts, a Symbolist inheritance of common currency already within modernism—it concatenated Picabia’s canvases into vertiginous, spinning motion. Sometimes signed on all four sides of the canvas as if made to be rotated, sometimes based upon the movements of dance, or the struggle of a wrestling match, Picabia’s paintings took such physical motion as their great metaphor and the structuring engine of the artist’s first attempts at abstract art. Thinking physical mobility in analogy to the experience of music, Picabia was after a painterly form that would not stand still. **Music is Like Painting** (ca. 1915), a later mechanomorph, spells this out: it is precisely the kinesis of Picabia’s musicalist aesthetic, the whirling lines and looping passageways of canvases like **Udnie** (1913)<sup>Fig. IX</sup> and **Edtaonisl** (1913), that were then passed down into his Dada images, his mechanical drawings, with their gears endlessly spinning, their wires reaching, looping, circulating. From music to the machine, mobility descends upon Picabia’s sense of line, upon his very notion of representation. While modestly and typically making no mention of her own role in the actual origin of such “aesthetics of movement,” this is what Buffet saw extended now in Calder’s sculptural art.



Fig. IX Francis Picabia, *Udnie (ou la danse)*, 1913. Musée National d’Art Moderne – Centre Pompidou, Paris.

## II.

In a foundational text of 1932 entitled “How to Make Art?” Calder seemed to explain his Galerie Percier exhibition title, **Volumes–Vecteurs–Densités**, by discussing his use of “directional line.” “How does art come into being?” Calder asked, “Out of directional line—vectors representing motion, velocity, acceleration, energy, ... spaces and volumes ... penetrated by vectors.”<sup>XXI</sup> Understood as Calder’s deployment of the language of the engineer, the artist’s words here also take up the perverse appropriation of such language by Dada and its mechanical drawings. The bachelor machine, indeed, had been dependent on the strategy of what has more recently been called the “Dada diagram.”<sup>XXII</sup> Dada borrowed the language of machine drawings not simply to “represent” machines, but to imagine an abstract field of diagrammatic relationships and polymorphous connections, to enact on the level of representation the relays and circuits that machines produce. Riddled by linear vectors and associative linkages—especially in the mechanomorphs of Picabia—the Dada diagram was not so much a picture as a map, its connecting lines charting a potential field of becoming, an endless work of transformation, a wild attempt to fuse and sew together in new ways the fragmented particles of modernity. Cubism shattered pictorial space, which now the Dada diagram sutured together, fusing the disparate—the result a hybrid monster more than a

<sup>XXI</sup> Calder, “Comment réaliser l’art?” *Abstraction–Création, Art Non–Figuratif 1* (1932), collected in *Calder: Gravity and Grace*, p. 47.

<sup>XXII</sup> David Joselit, “Dada’s Diagrams,” in *The Dada Seminars*, eds. Leah Dickerman and Matthew Witkovsky (Washington, DC: National Gallery of Art, 2005), pp. 221–39. I have further explored the Dada diagram in my book *The Artwork Caught by the Tail*.



“return to order,” or a reconstituted pictorial unity. Passed down perhaps through the dotted lines and vectors of Calder’s friend Joan Miró—one of the great initial inheritors of the Dada diagram—Calder’s earliest mobiles evoked this understanding of the diagrammatic. They were affairs of “directional lines,” agglomerations of parts and pieces held together in loose relation by the artist’s thin lengths of wire.

12.

To understand the Dada diagram, the reader should envision the connected, interpenetrating forms of Duchamp’s **The Large Glass**, or early Picabia mechanomorphs such as **De Zayas! De Zayas!** (1915),<sup>Fig. X</sup> full of wires, pulleys, an allegorical journey embodied in the work’s linear passageways. Words too, for Picabia, begin to run like linear vectors, arcing through the blank representational space of the Dada diagram (**Portrait of Gabrielle Buffet** (1915)). Trajectories circle aimlessly, or prepare to depart the painting’s space, combining words and dotted, directional lines together, in works like **Universal Prostitution** (1918–19) or the evanescent, nearly transparent graphic networks of the many images that make up Picabia’s book **Drawings and Poems by the Girl Born Without a Mother** (1918). Ultimately diagrammatic lines erupt for their own sake, a new form of abstraction, in works like **Abstract Lausanne** (ca. 1918) or **Serpentins** (Streamers, ca. 1919–22). They finish by taking over the pictorial representation entirely, as in drawings such as Picabia’s **Molecular Construction** (1919) or the linear lineages traced in **Mouvement Dada** (1919) or the contradictory vectors pointing like schizophrenic arrows in **Portrait de l’auteur par lui-même** (1920).<sup>Fig. XI</sup>

Fig. X Francis Picabia, *De Zayas! De Zayas!*, 1915. Published in 291 5–6 (July–August 1915).

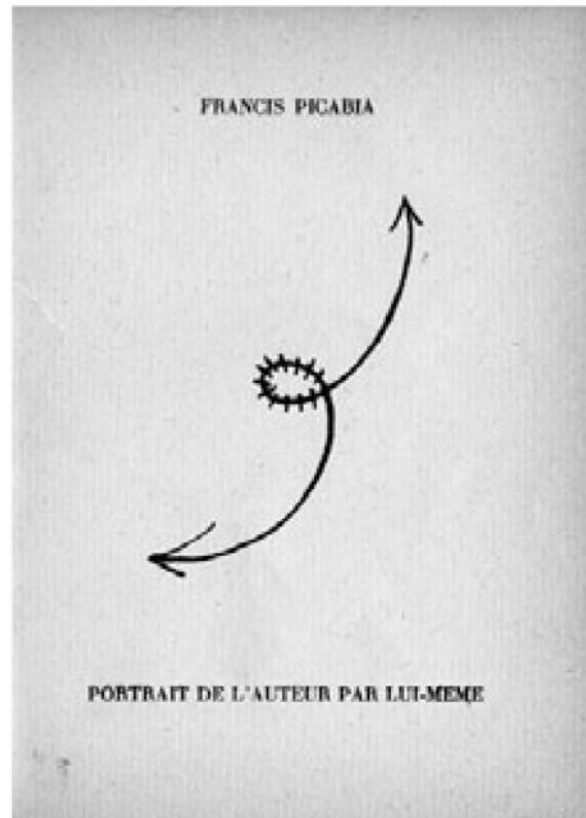
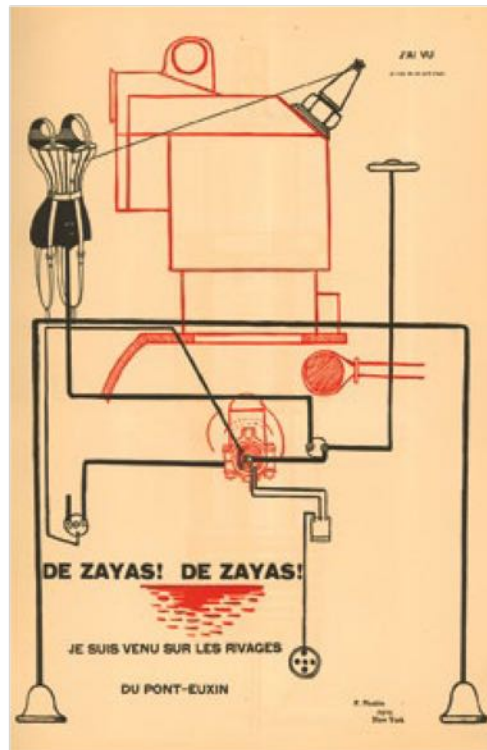


Fig. XI Francis Picabia, *Portrait de l'auteur par lui-même*, 1920. Frontispiece for Francis Picabia, *Unique eunuque* (Paris: Au Sans Pareil, 1920).

With this development and trajectory quickly sketched, we begin to sense that in the Dada diagram art history confronts a new kind of representational form, and one it is only just beginning to understand. A diagrammatic line, for example, must be understood as both representational and abstract—at the very same time. It has no “purity,” no single, essential nature, being instead a form of the “between,” an interstitial movement from one thing toward another. The “directional line” of the diagram retains potentially iconic significance, machinic or other resemblances; and yet such line becomes operative, performative, a vector dedicated to enacting linkage and transformation. It is a line with a job to do—informational significance, the conceptual labor of the plan, but also the vectored movement of one entity toward another, the attachment of one particle to another, the shifting of one state or form into another. Diagrammatic line begins the process of abandoning line’s traditional function: to trace contour, to bound a shape, to create form from the crucial instantiation of an edge that defines itself as border, outline, the separation of shape from its surrounding space. Inverting such separation, diagrammatic lines concern themselves instead with connection. The form that they form embodies one concerned with sheer relation. A diagrammatic line moves, rather than bounds. It is a pathway. And its forms of association, its drive toward gathering and linking, will not rest in a static representation.

### 13.

A last connection between Calder and Picabia, this time achingly concrete: Calder collected a few of Picabia’s canvases, the most important of which was entitled **Bissextiles** (Leap Years, 1922).<sup>Fig.XII</sup> Part of the series of “last mechanomorphs” that Picabia showed in a storied exhibition in Barcelona late that year, the work shares in the primary characteristic of the larger series: a movement of the readymade, machinic image toward the experience of abstract, even Constructivist, form.<sup>XXIII</sup> In **Bissextiles**, lines overlap and pile up, like the **Transparencies** eventually to come



Fig. XII Francis Picabia,  
*Bissextiles*, 1922.  
Private Collection.

<sup>XXIII</sup> Picabia’s last mechanomorphs seem most directly to target and parody Kazimir Malevich and Suprematism. On the 1922 series, see the catalogues *Francis Picabia: Máquinas y Españolas* (Valencia: IVAM, 1995); *Francis Picabia, galerie Dalmau, 1922* (Paris: Éditions du Centre Pompidou, 1996); and the chapter “Prolem Sine Matre Creatam: Dada Abstraction,” of my book *The Artwork Caught by the Tail*, pp. 201–85.



(coincidentally or not, the latter series also has always been linked to an important voyage that Picabia would take to Barcelona, like Calder's trips to visit there with his friend Miró). We sense wheels, or gauges, or fragmented gear-forms with their bristling teeth. But the teeth also drift away into autonomy, becoming jagged, zigzagging lines of their own, orphaned and floating in empty space. Black and white lines trace circles and vectors and pathways without structural or iconic significance, at least on the readable surface of things.<sup>xxiv</sup> **Bissextiles** creates abstract form from the inscrutability of Picabia's readymade procedures of the trace and the mimetic copy, the procedures abstraction was thought to destroy. But it also garners its sense of abstraction from the piling up of linear vectors, the intensification of "directional line," seething here and moving seemingly now for its own sake—without origin or destination, like the stranded leap-year-days figured in the work's title. The last mechanomorphs create abstraction from the procedures of the diagram. More, they clarify the new form of abstraction the diagram instantiates, as **Bissextiles** unleashes the vector, the trajectory, in something like its pure form. One likes to think it was precisely this abstraction of the diagram that captured Calder, and attached him to this specific work.<sup>xxv</sup>

<sup>xxiv</sup> Arnauld Pierre has shown that the source for *Bissextiles* comes from a photograph of the astronomical clock of the Strasbourg Cathedral published in *La Science et La Vie* 45 (June–July 1919). Such a source perhaps explains some of the visual rhymes that this painting makes to the crucial and earlier Dada drawing by Picabia entitled *Reveil Matin* (1919), made from the gears and internal workings of a disassembled alarm clock.

<sup>xxv</sup> The work has an important provenance and is by all accounts one of the key works from the last mechanomorphic series. Shown in Barcelona in the 1922 Galerie Dalmau exhibition, the work is inscribed on the back "To René." It is my guess that the work may have been given to René Hilsum, the founder of the bookstore and publishing house Au Sans Pareil, where the Dadaists published and exhibited. Hilsum was a school friend of André Breton, and by 1922 was living along with poets like Blaise Cendrars in the Parisian suburb of Tremblay-sur-Mauldre, where Picabia too had moved and where he painted the last mechanomorphic works. We know that by 1926 the work was included in the notorious "Duchamp" auction of "80 Picabias" held in Paris that year; seemingly it was purchased by one of Duchamp's closest friends, Henri-Pierre Roché, entering Calder's collection after that. It is one of the most concrete connections one could make linking Calder back to the Dada roots from which his work extends.

#### 14.

Neither Calder nor Picabia has been well-served by the accepted stylistic terms that art history has used to narrate modernism, terms these artists seem actively to work against, to muddle, and to transform. As opposed to abstraction versus representation, or modernism and anti-modernism, or the avant-garde contra the "return to order"—or Dada against Constructivism, Surrealism undoing Purism: there is another pathway that modernism takes through the 1920s and 1930s that has not been adequately traced. There exists a modernism of the diagram, bridging and linking together the concerns of figuration and abstraction both. For in the 1920s, beyond the "return to order," we witness the rise of a networked or diagrammatic figuration, a figuration itself caught up in abstraction—a figuration after modernism, to borrow the critic Devin Fore's formula.<sup>xxvi</sup>

<sup>xxvi</sup> Devin Fore, *Realism After Modernism: The Rehumanization of Art and Literature* (Cambridge, MA: MIT Press, 2012).

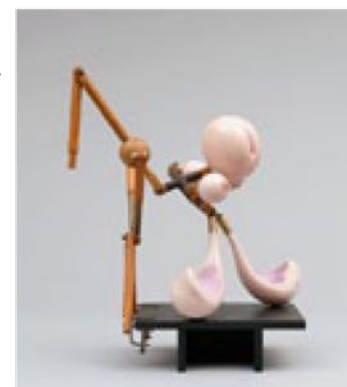
Almost all the major artists of the interwar generation participate in some way in this diagrammatic modernism. The cubists, after a time, not only abandon modernist fragmentation in the mode of a "return to order" and the embrace of neo-Classicism alone—they also incorporate the diagram. Picasso participates in this, of course, but here Léger comes to the fore, fusing body parts and geometric abstraction, hooking up figuration to the networks of the machine. Reductivism, even in sculpture, plays its part—and an artist as important to Calder as Brancusi



Fig. XIII Joan Miró,  
Bouquet de fleurs ("Sourire  
de ma blonde"), 1924.  
Private Collection, Paris.

could be described as resolving sculptural abstraction as an affair of the diagrammatic vector, an apotheosis of the Futurist "aesthetics of movement," in a key work such as **Bird in Space** (1923), sculpture as a literal "line of flight." The Surrealists inherit the diagram from Dada directly, and intensify it, magnify it, and alter its roles. In the realm of Surrealist painting, Miró is the diagram's greatest poet, with the body in his painting endlessly resolved as abscissa and ordinate, writing stretched into pathways that travel, stars trailing light in the form of dotted lines, swirling linear trajectories. The vectors of a canvas such as **The Smile of My Blond** (1924)<sup>Fig. XIII</sup> hook up far-flung body parts to the figure from which they have been dispersed—echoing the fusion of figuration and abstraction themselves, or word and image as well. And in the realm of Surrealist sculpture, Alberto Giacometti seems to comprehend Brancusi's abstraction of the vector, and proffers in turn a figuration where sculptural bodies become pure zigzag and arrow (**Man and Woman** (1929), **Point to the Eye** (1931)). He realizes a sculpture of the trajectory (**Project for a Passageway** (1930–31)). And he takes the image-basis of the diagram as an impetus for his vaunted making of sculpture a horizontal thing, like an architectural plan, a sculptural cartography, in analogy to the space of the printed page. Most of Giacometti's horizontal works seem directly to invoke the diagram, in either their form (**Circuit** (1931), **No More Play** (1932)) or in their actual name (**Circuit** again; **Fall of a Body onto a Diagram / Life Continues** (1932))—the latter work naming, in fact, the dynamic that befalls figuration after the challenge of and to modernist abstraction. It is the heritage we see developed in Surrealist sculptures such as Hans Bellmer's **The Machine-Gunneress in a State of Grace** (1937),<sup>Fig. XIV</sup> its bulbous figurative fragments held together not just by a robotic stick figure, described by many as insect-like and deathly, but by the sculptural equivalents of the linear vector, the diagram's directional line hooking up the erotic fragments of bodily figuration.

Fig. XIV Hans Bellmer,  
The Machine-Gunneress in  
a State of Grace, 1937.  
The Museum of Modern Art,  
New York.





And it is the heritage that Calder makes most centrally his own. Placed beside the Bellmer diagrammatic figure, Calder's sculpture cries out for other narratives than the Constructivist lineage of "drawing in space" with which he has been associated. For rather than a line that simply cancels volume and mass, opening up sculptural form by revealing the great abstract lesson of visual structure, the secret and underground Dada lineage of diagrammatic line destructures more than it structures. No skeleton, no armature, no girding of the logic of form, the diagram and its modernist history has gone mostly unseen for its great passion lies in the undoing of form, the becoming—other of the image, the pathways and unstable mobilities of the trajectory and the vector.

Fig. XV Alexander Calder, *Space Tunnel*, 1932. Calder Foundation, New York.



## 15.

We should not end here. For Calder not only inherits this lineage of the Dada diagram, he is perhaps the artist of the 1930s and 1940s who does the most to transform it. He intensifies the modernism of the diagram. We could point, beyond Calder's sculptures, to his pictorial work—for example the 1932 series of ink drawings<sup>Fig. XV</sup> and paintings of "directional lines," viscera-like passageways and looping tubes, the direct descendants it seems of Picabia's Orphic and mechanomorphic forms. We could point to the sculptures Calder imagines that act like networks—with names and inspiration in creatures like "spiders" with their linear webs, or "parasites" with their drive toward attachment, connection, infiltration. We should consider the most diagrammatic series of Calder's



Fig. XVI Alexander Calder,  
Constellation, 1943.  
Calder Foundation,  
New York.

entire body of work, the **Constellations** of the 1940s.<sup>xxvi</sup> Again named by Duchamp, this under-known format by Calder was also again described early and first by Gabrielle Buffet-Picabia: "Although they are not mobile, they too are made up of multiple components, a cluster of forms that seems to have resulted from some cosmographical cataclysm. Splinters, debris, fragments of iron and wood are arranged at a certain distance from each other, set in space on rigid stems that connect them to a base, whether a wall or the ground. One almost wishes that a giant magnet could eliminate the constraints imposed by the wire stems and let these **Constellations** ... float in space freely, magically held up there by an invisible magnetic force."<sup>xxvii</sup> Described once more and most often as part of Calder's interest in the cosmos, in planetary systems and model universes, the **Constellations** in actuality repeatedly figure the body, held in connection to other particles and sculptural shards—they are affairs of connection, a sculpture in the form of a miniature collection. They body forth a sculpture of the diagram, of pure relation.

<sup>xxvi</sup> Buffet-Picabia, "Sandy Calder, forgeron lunaire," in Calder: Gravity and Grace, p. 68.

## 16.

We should not end here, but we must, and we thus end with the artist's primary formats, the mobiles and the stabiles. For Calder's mobiles would never lose the diagrammatic vocation with which his abstract art began. In Calder's mature art, every line should be seen as a vector. In his monumental stabiles, for example, planes erupt into linear forces, producing arcing, "directional" movements—arrows more than legs or branches, lines of flight more than biomorphic play. Such works' frequent resemblance to the connecting form of bridges is hardly coincidental. And his mobiles present sculptures that hold a mounting series of objects and forms in a set of unstable, fugitive relations, linked by a myriad of wire lines, metal rods, and pieces of string. Flat and graphic, Calder's work turns sculpture into a pictorial form, but this picture is a diagram,



a mobile enactment in real space of the bachelor machine's virtuality and lability (as Calder's "pictorial" sculptures always shift back when moving into three-dimensional volumes, mapping a continuity between diagrammatic and real space). This is a continuity—between the virtual space of the diagram and the contingent space of the real—that had been achieved differently by Duchamp's transparent **The Large Glass** (and certain lesser known gestures by Picabia, like his "transparent" painting made with string, **Danse de Saint-Guy** (1919)); it points in another way to how Calder's mobiles could be said to be in dialogue with Duchamp's and Picabia's work.

The mobiles, dreaming of connection, envision a sculpture not of the body—the long tradition central to the sculptural medium—but of the network and the vector. It is a sculpture of attachment and relation, linear trajectories and transformation, a spreading web of linkages and endless becoming. Calder's mobiles, Pepe Karmel has written, "provide a powerful allegory of a self in an ongoing process of formation—unfixed in shape and unlimited in potential."<sup>xxviii</sup> And this sense of infinite transformation emerges, for Calder, not only through the abstract dreams of Neo-Plasticism, the analytic drives of Constructivism, but from the connective tissue of the Dada bachelor machine, the vector, the diagram. The trajectory from Picabia to Calder is a lineage of the trajectory—a diagrammatic modernism whose true form and lineaments we are only just coming to know.

<sup>xxviii</sup> Pepe Karmel, "The Alchemist: Alexander Calder and Surrealism," in *Alexander Calder: The Paris Years, 1926-1933*, eds. Joan Simon and Brigitte Leal (New York, NY: Whitney Museum of American Art, 2008), p. 217.

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