SUZANNE DUCHAMP'S READYMADE PAINTINGS

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uzanne Duchamp pushed the boundaries of painting by incorporating unorthodox, machine-made materials within interconnected pictorial geometries. This article focuses on her distinct way of combining modern elements with traditional mediums and situates her within dialogues on the readymade taking place between New York, Zurich and Paris during the 1910s and 1920s. These exchanges involved an international group of artists, including Jean Crotti, the artist's older brother Marcel Duchamp, Elsa von Freytag-Loringhoven, Francis Picabia, Man Ray, Sophie Taeuber-Arp and Beatrice Wood. While Duchamp has been summarily treated in the literature on Dada, there has been little concentrated attention focused on her specific involvement with the movement. Her engagement ranged from correspondences with her older brother Marcel while he was based in New York to in-person collaborations when many of these artists returned to Paris after World War I, particularly Picabia and Crotti, whom she would marry in 1919. This article explores Duchamp's readymade paintings both in relationship to other artists and as a body of work in its own right. A better understanding of her individual approach will shed greater light on ideas she shared with other Dadaists. This is because the particular way she integrated readymades within the mediums of painting, drawing and poetry arguably had an effect on the broader group.

Picabia wrote in 'Carnet du Doctor Serner' in 391: 'Suzanne Duchamp does more intelligent things than paint'. By turning Picabia's assertion into a question, this article asks: What exactly was Duchamp doing that was 'more intelligent' than painting? Testing Picabia's claim against her artworks, I will examine how the complex materials of *Un et une menacés* (1916, figure 1), *Radiation de deux seuls éloignés* (1916–20, figure 2), and *Le Readymade malheureux de Marcel* (1920, figure 3) function in relationship to each other. These works

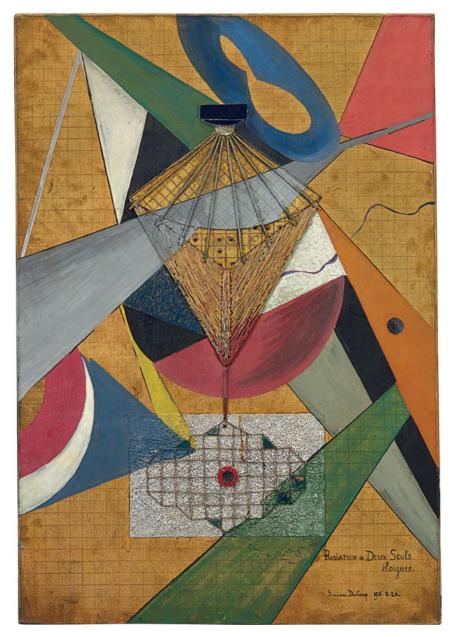


Figure 1 Suzanne Duchamp, *Radiation de deux seuls éloignés*, 1916–20. Oil, gold paint, string, wax, plastic, glass beads and tinfoil on canvas, 73.1 x 50 cm. Private collection. © Suzanne Duchamp / ADAGP, Paris and DACS, London 2020.

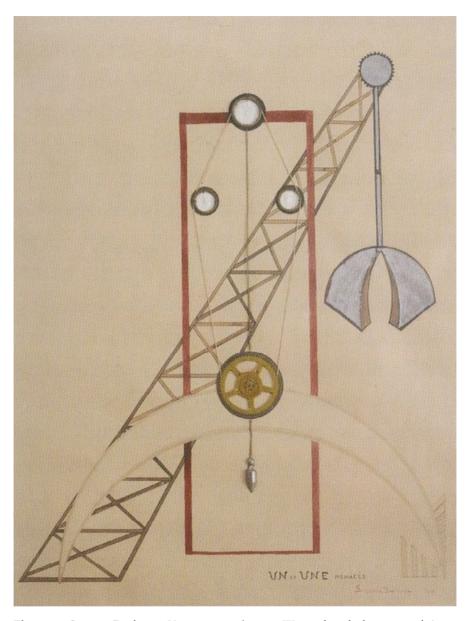


Figure 2 Suzanne Duchamp, *Un et une menacés*, 1916. Watercolor, clock gear, metal rings, plumb bob and string on paper, 70 x 54.5 cm. Private collection. © Suzanne Duchamp / ADAGP, Paris and DACS, London 2020.

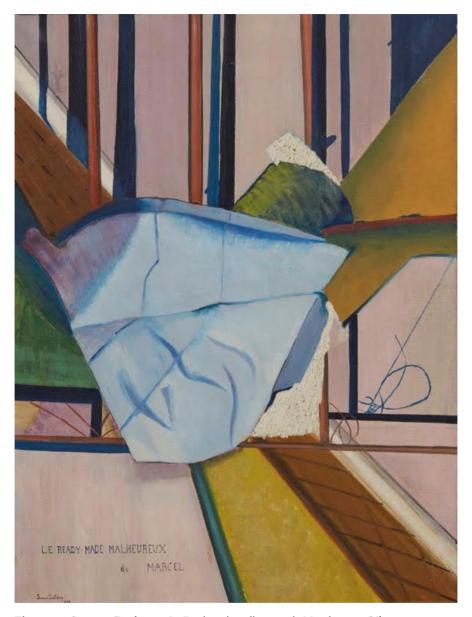


Figure 3 Suzanne Duchamp, *Le Readymade malheureux de Marcel*, 1920. Oil on canvas, 81 x 60 cm. Private collection. © Suzanne Duchamp / ADAGP, Paris and DACS, London 2020.

highlight Duchamp's distinctive way of juxtaposing painted subjects with unusual word-plays that treat language as an object. This article explores the different elements of her visual lexicon as a series of propositions about painting. Duchamp probed the possibilities of the medium by combining nonconventional materials within her artworks, transforming store-bought elements into interwoven geometric structures. Moving back-and-forth between the textual and the pictorial, Duchamp acted upon her readymade forms, transforming painting in the process. Rather than a negation of painting or as somehow beyond, I will argue that her material intelligence offered a redescription of the medium's constituent parts.

Language

Suzanne Duchamp offered language as a tool for interpreting her readymade geometries rather than a straightforward causal explanation of them. Characteristically, *Un et une menacé*, *Radiation de deux seuls éloignés* and *Le Readymade malheureux de Marcel* have puzzling titles. While *Un et une menacés* translates roughly as 'he and she threatened', the subjects supposedly under threat are gendered in the French. While the grammatically convoluted *Radiation de deux seuls éloignés* can be understood as 'radiation of two solitary beings', the 'beings' are rather more like two entities in the process of being separated. Likewise, even though *Le Readymade malheureux de Marcel* is commonly referred to as 'Marcel's Unhappy Readymade' in English, the word 'malheureux' can translate as either 'unhappy' or 'unfortunate'. Even so, what exactly would make a readymade 'unhappy'? These inscriptions provide a way of understanding Duchamp's work and her linguistically loaded phrases simultaneously complicate and become a part of her visual forms.

In Radiation de deux seuls éloignés, the word 'radiation' draws a relationship between coloured and metallic geometries, with shafts of light radiating from the centre of the painting. Paul Valéry suggests that such an effect is a part of aesthetic experience in his note 'Bad Thoughts and Not So Bad' (1941):

We have moments in which our thoughts seem on the instant richer than ourselves; pregnant with more consequence; deeper with a depth that we ourselves could never plumb. I would compare this phenomenon to the irradiation produced on the retina by a pinpoint of very brilliant light; or to the area that develops around an insect bite.²

In Radiation, Duchamp conveys both of Valéry's associative aspects. While painted planes and coloured shafts enact the blinding brilliance of light, her title demands attention like an 'insect bite'. The canvas is punctured with 'pinpoints' through which she attached store-bought materials with thread. Her linguistic and visual languages 'irradiate' across geometric forms illuminated as if by rays of light. The enigmatic title acts as one of the unorthodox materials of the painting. Duchamp juxtaposes 'irradiation' with 'radiation', presenting coloured light and painted and applied forms that spread out from each other. This was related to how she distanced herself from traditional approaches to painting, using ordinary and extraordinary materials together to illuminate the possibilities of her medium.

In *Radiation*, Duchamp brought together visual and verbal subjects that operate in a wider dialogue with other artists. However, she has tended to be seen as working in a more narrowly biographical context. William Camfield has argued that Duchamp's 'intentions in this painting/collage are[...]unknown', proposing 'the title[...]is a straightforward clue to the basic content, namely the ultra-sensible contact of Jean and Suzanne during a period of physical separation brought about by work and the war'. Linda Henderson similarly contends, 'Suzanne suggests the communication of two lovers at a distance'. Drawing a connection between Duchamp's geometries and industrial forms, Henderson connects the painting to an antenna illustrated in an early twentieth-century American treatise on wireless telegraphy, writing 'the upper form resembles a cage-type emitting antenna and the lower gridded one implies a surface on which the "radiations" are to be recorded'.

Duchamp conflates the bodily with the mechanical in *Radiation* using deliberately puzzling language. Henderson – and later Ruth Hemus – note the relationship between the adjective 'éloignés' ('distant' or 'remote') and Marcel Duchamp's use of the noun 'éloignement' ('distancing') in the *Box of 1914* (1913–14), which contained notes related to *The Bride Stripped Bare by her Bachelor's, Even (The Large Glass)* (1915–23).⁶ In his collected writings, however, the term 'éloignément' is translated as 'deferment'.⁷ The note

reads: 'Against military service: a "deferment" of each limb, of the heart and the other anatomical parts; each soldier being already unable to put his uniform on again, his heart feeds telephonically, a deferred arm, etc.'. This points toward a relationship between the body and the machine that recurs throughout Duchamp's work, although her brother's note on 'deferment' suggests a more technological and temporal register.

Marcel Duchamp's linking of the word 'éloignement' to military service is a reminder that Suzanne Duchamp made these artworks during World War I and the outbreak of the Spanish Flu pandemic and its aftermath. From 1916 onwards, she had served as a military nurse at the Hôtel des Invalides in Paris. Through this work, she would have seen first-hand the ravaging physical effects of the war, whilst simultaneously learning about new developments in medicine, science, and technology. Even in their ambiguity, the words and phrases that Duchamp brought together in her titles contain references to threat and separation that are played out through her interconnected pictorial structures. She used language to heighten the enigma of her paintings, juxtaposing grammatically unusual inscriptions with unorthodox material forms. In her paintings, linguistic subjects act upon visual geometries and vice versa.

Thread

Suzanne Duchamp and Marcel Duchamp engaged in a transatlantic dialogue on the subject of the readymade while bringing machine-made, everyday objects into their bodies of work. On 15 January 1916, Marcel wrote from New York to Suzanne in Paris:

Now, if you have been up to my place, you will have seen in the studio, a bicycle wheel and a bottle rack. I bought this as a ready-made sculpture ... I have bought various objects in the same taste and I treat them as 'readymades.' You know enough English to understand the meaning of 'readymade' that I give these objects. I sign them and think of an inscription for them in English.¹⁰

This letter is the first time that Marcel Duchamp used the term 'readymade' and it points to Duchamp's close involvement with her brother's evolving ideas. Even though her written reply is not known, the artworks she made can be read as her response. In *Un et une menacés* and *Radiation*, she incorporated

readymade elements into the material structure of her paintings, while in *Le Readymade malheureux*, she transformed written instructions sent by her brother into her own painted geometric forms.

André Gybal, an early biographer, wrote, 'Those who knew Suzanne Duchamp in her prime youth said that she was born with a pencil in her hand'. ¹¹ Drawing offered her an exploratory medium to plan out readymade elements that she elaborated upon with thread. In *Radiation*, in particular, she put the haptic qualities of thread in dialogue with the drawn line. In her drawings for *Radiation*, she studied various elements that she later constructed with string. The first drawing – known as *Far from* (1916) – contains the cryptic bilingual inscription '______ X / ou / Far from'. Playing with the potential of words, Duchamp leaves open the possibility for anything to be separated from some far-off entity. The orientation of the second drawing for *Radiation* (1917, figure 4) is rotated and it bears a simplified inscription – an 'X' and an 'I'. In the painting, Duchamp replaced the drawn lines of the studies with thread, crinkled tinfoil, beads and glass tiles overlaid with paint. She intertwined drawing and sewing in her artworks with each of the mediums offering a distinct means of exploring visual subjects.

Duchamp's drawn and sewn forms relate to geometries taught in French primary schools from the 1880s onward that she likely engaged with during her studies. As Molly Nesbit explains, 'The relations between lines were studied[...][as] the syllables of drawing[...]the student went on to master the figures of plane geometry, and then those of solids'. 12 Duchamp's shapes and colours operate with their 'own elemental logic', as Nesbit describes them functioning in the drawing lessons. 13 Nesbit notes, however, that there was a significant difference between the lessons that were taught to male and female students. In particular, female teachers 'could content themselves with perspective drawing and then turn to designing for embroidery, lace, and tapestry'. 14 Although male pupils learned how to 'master the drawing of things as they were[...][female pupils] had to work[...]on seeing things as they appeared[...][and] learn how to apply what she saw to cloth'. 15 In Radiation, Duchamp brought these lessons full-circle, sewing into the canvas as if it were cloth, while incorporating perspectival geometries as material forms. This approach was different from how thread would have functioned in a medium like tapestry where the material of thread was inextricable from the sewn designs or patterns. While threaded abstractions in tapestries and

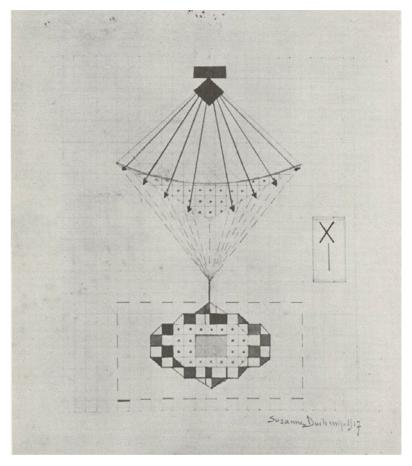


Figure 4 Suzanne Duchamp, Study for *Radiation de deux seuls* éloignés, 1917. Ink and watercolor on paper, 32 x 27 cm. Private collection. © Suzanne Duchamp / ADAGP, Paris and DACS, London 2020.

embroideries by fellow Dadaist Sophie Taeuber-Arp are related to works like *Radiation*, Duchamp moved away from more traditional applications of thread by using it as one of many material elements that structured her visual subjects.

Marcel Duchamp's use of thread can also be seen as playing into this dynamic of gendered associations. In *Broyeuse de chocolat, no. 2* (1914), he glued thread to the canvas, outlining the forms of the grinding machine. He based his subject on a real machine he had seen in the window of the

confectioner Gamelin while in Rouen visiting his family. 16 George Baker has described Marcel Duchamp's technique as a 'precise graphic depiction' in which he used thread to render forms with 'cold, dry strokes'. 17 It is clear that Duchamp's approach was far more insistently materialist than her brother's. In Radiation, for example, she sewed string to the canvas and to the tinfoil assemblage. She also glued pieces of string as an intermediary layer within her enigmatic structure ornamented with painted beads and glass. In the lower part of the central form, she created a gridded network of thread to which she attached small beads. A historical photograph of Radiation reveals that the threaded-tinfoil structure originally featured a checker-board pattern of glass suspended within the interstitial spaces between the string. In Un et une menacés, she attached a clock gear, metal rings and a plumb bob to her paper support, while leaving the thread visible as its own geometric configuration. As in the studies for Radiation, the drawing for Un et une menacés (1916) highlights Duchamp's deliberate interplay with machine-made forms and hand-drawn – and hand-sewn – structures.

When Suzanne Duchamp and Jean Crotti married in Paris in April 1919, Marcel Duchamp sent them instructions for a readymade from Buenos Aires as a wedding present. He later explained in an interview with Pierre Cabanne:

It was a geometry book, which he had to hang by strings on the balcony of his apartment in the Rue Condamine; the wind had to go through the book, choose its own problems, turn out the pages. Suzanne did a small painting of it, 'Marcel's Unhappy Readymade.' That's all that's left, since the wind tore it up.¹⁸

Dawn Ades was one of the first scholars to acknowledge Duchamp's collaborative role in taking the photograph of the suspended textbook (figure 5) that she then turned into her own painted readymade. While scholars have more often focused on the photograph, Anne Tomiche recently addressed Duchamp's role in making *Le Readymade malheureux*. Tomiche described her act as one of 'rethinking the notion of collaboration so as not to be content with existing in the shadow of her brother and to claim her status as author'. Duchamp turned the puckering pages into vibrant coloured planes, painting a piece of string at the lower right to signal the



Figure 5 Attributed to Suzanne Duchamp and Jean Crotti, *Le Readymade malheureux*, c. 1919. Gelatin silver print, image: 10.7 x 6.9 cm, sheet: 11 x 7 cm. Philadelphia Museum of Art. Gift of Virginia and William Camfield, 1983. © Suzanne Duchamp and Jean Crotti / ADAGP, Paris and DACS, London 2020.

photographic source. The simulated thread in *Le Readymade Malheureux* integrates her pictorial geometries, as the real material does in *Radiation* and *Un et une menacés*. Rather than allowing herself to be simply side-lined by Marcel Duchamp's gesture, Suzanne Duchamp made a painting that used some of the same elements – the string, the chromatic rays, the enigmatic central shape – that she developed as her own distinctive tropes.

Beads

Suzanne Duchamp often used beads as readymade elements within complex pictorial structures. As a material, beads are more often associated with the decorative arts, or with fashion, than with fine art. They are conventionally aligned with femininity, making it productive to explore Duchamp's use of beads in relationship to that of other Dadaist women artists. Elsa von Freytag-Loringhoven – who lived and worked in the Lincoln Arcade Building where Marcel Duchamp and Jean Crotti shared a studio between 1915 and 1916 - constructed artworks from readymade materials imbued with mechanical and bodily sensations.²¹ While Freytag-Loringhoven incorporated beads as readymade elements in her artworks, she often maintained their ornamental function. Amelia Jones has read Freytag-Loringhoven's involvement with Dada as a way of presenting an art historical model that recognises 'the crucial importance of[...]avant-garde women in stimulating, promoting, and producing the ideas and aesthetic innovations associated with Dada'. ²² Jones points towards new ways of understanding women artists working within this milieu and opens up a means of considering Freytag-Loringhoven's use of readymade materials - whether integrated into fashions or objects - in relationship to Duchamp.

Freytag-Loringhoven incorporated objects and materials from everyday life into her artworks with irreverence. With Earring-Object (c. 1917-19), she attached a triangular piece of metal to a spiralling coil and then adorned herself by wearing it as an earring. ²³ Jones situates this artwork within Freytag-Loringhoven's 'renegade power...as a ragpicker', in which she transformed materials from the urban environment into ornaments for the body.²⁴ During the same period, Duchamp pioneered an approach to integrating readymade elements like beads within the interconnected material geometries of her paintings that pushed them beyond their decorative function. In a group of collages, Freytag-Loringhoven worked with beads and a variety of other elements that Duchamp had used earlier. In Portrait of Marcel Duchamp (c. 1922), Freytag-Loringhoven constructed a vivid representation of her subject using everything from ink and pigment on paper to circles of metal foil and string. In Dada Portrait of Berenice Abbott (c. 1923-24), Freytag-Loringhoven ornamented her pictorial surface with metal foils, glass, beads and cellophane. In these works, Freytag-Loringhoven moved beyond her medium with portraits that are as much about their materials as they are about the portrait's subject.

Alongside Suzanne Duchamp in Paris and Freytag-Loringhoven in New York, Sophie Taeuber-Arp was exploring related subjects and materials in Zurich, working in 'various genres simultaneously'. ²⁵ At the time, Taeuber-Arp was teaching textile design in the Department for Applied Arts at the Trade School in Zurich and making beaded designs, purses and patterned jewellery. ²⁶ Walburga Krupp argues that Taeuber-Arp's 'design innovations were not primarily in the invention of new objects[...]but rather in their formal composition and colour schemes'. ²⁷ In a beaded notebook cover with abstract motifs (c. 1917–1918), Taeuber-Arp's patterns evoke natural and industrial forms. In another beadwork likely made as a notebook cover or pouch (1918, figure 6), she constructed bold geometric planes with shimmering beads. ²⁸ In *Head* (1920), she ornamented her sculpture with



Figure 6 Sophie Taeuber-Arp, Untitled (beadwork), 1918. Beadwork (notebook cover or pouch). Glass beads, thread and fabric, 10 x 13 cm. Bischofberger Collection, Mannedorf, Switzerland.

flowered and spiralling beaded earrings that added, in the words of Anne Umland, to the 'witty hybridity' of a work that existed between fine art and the applied arts.²⁹ Duchamp did something different by elevating beads into more machine-like structures, such as *Radiation*, where she suspended beads with thread and glue, and *Un et une menacés*, in which she used a plumb bob as if it were a bead hanging from a mechanized form. While the ways that Taeuber-Arp and Freytag-Loringhoven used beads often connoted the production of jewellery, Duchamp differentiated them from fashion by incorporating them as readymade elements ripe for material transformations.

Of the Dada artworks that integrated store-bought objects, Beatrice Wood's *Un peut (peu) d'eau dans du savon* (1917/1977, figure 7) is one of the most striking conflations of the body with the readymade. Wood – at the encouragement of Marcel Duchamp – attached a piece of shell-shaped soap to a 'tactical' position on a hand-rendered voluptuous female nude.³⁰ Wood submitted the assemblage to the exhibition of the Society of Independent Artists in 1917, the same year the hanging committee rejected *Fountain* (1917), a work sent in by R. Mutt. In the 'Dream of a Picture Hanger', published in the journal *The Blind Man* that Wood co-edited with Marcel Duchamp and Henri-Pierre Roché, she imagined herself as the readymade within her painting. 'Once I jumped into a picture and sat still', she wrote, 'I was the piece of soap with nails in my back stuck on a canvas'.³¹ Wood attached the soap as an oversized bead for a headless body. Like Duchamp, she used her title – a play on words that translates as a 'A little water in some soap' – to elevate visual forms into something more than their individual parts.

Suzanne Duchamp needs to be seen as part of this larger dialogue. Considering Wood's *Un peut (peu) d'eau dans du savon* in relationship to *Fountain* provides an opportunity to reconsider the broader Dadaist project of working with readymades in a way that incorporates, rather than excludes, her artworks. After being rejected from the exhibition, Alfred Stieglitz photographed *Fountain*, a reproduction of which was also published in *The Blind Man*. In Stieglitz's photograph, *Fountain* looks much like the curvaceous body of Wood's female figure. In her introductory remarks to the article, 'The Richard Mutt Case', Wood described the importance of the act of choice because the artist 'took an ordinary article of life[...][and] created a new thought for that object'.³² The idea of giving 'new thought' to something store-bought offers another way of understanding how readymade

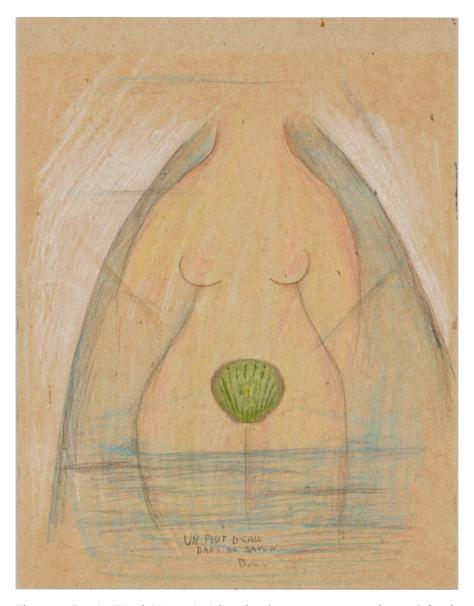


Figure 7 Beatrice Wood, *Un peut (peu) d'eau dans du savon*, 1917, recreated 1976. Colored pencil, graphite pencil and soap on board, sheet: 27.9 x 21.6 cm. Whitney Museum of American Art. Gift of Francis M. Naumann. © Beatrice Wood Center for the Arts, 2020.

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materials operate within Suzanne Duchamp's artworks. Thinking about how she used a material like beads can also shed light on her brother's approach. In particular, a photograph that Roché took of Marcel Duchamp's studio in New York captures *Fountain* suspended in an angled doorway, where it seems to dangle like a giant beaded charm.

Glass

When Suzanne Duchamp made *Un et une menacés*, *Radiation* and *Le Readymade malheureux*, Marcel Duchamp had already begun working on the *Large Glass*, which André Breton later described as 'a kind of great modern legend'. Scholars have often read Suzanne Duchamp in relationship to the *Large Glass*. Henderson argues that the theme of *Radiation* '[echoes] that of the *Large Glass*: here an antennalike [sic] "Bride" (Suzanne herself?) projects her message'. Psycho-biographical readings of the siblings like this one do not adequately address Duchamp's unusual approach to materials – including glass – that she shared with her brother. Even though she would not have seen the *Large Glass* in New York, she would have known first-hand about related works Marcel Duchamp had made in Paris. When he was making the *Large Glass*, Duchamp was working on a rather different scale, incorporating pieces of small glass into the structure of *Radiation*.

Glider Containing a Water Mill in Neighbouring Metals (1913–15), one of Marcel Duchamp's preparatory works for the Large Glass, clearly reveals the differences between the siblings' approaches. He used panes of glass as a support while she made glass come alive through painting. She integrated glass within her artworks by subsuming readymade materials into the interconnected layers of her compositions. In Un et une menacés and Le Readymade malheureux, Duchamp did not even use glass, choosing instead to simulate the material through different means. In Glider – as well as in the Large Glass – Marcel Duchamp took a deliberately pseudo-scientific and quasi-rational approach to his subjects and materials. Working differently, Suzanne Duchamp, transformed materials like glass by juxtaposing them with enigmatic language, painted geometries and unorthodox readymade forms.

In his essay '* water writes always in * plural' (1972), Octavio Paz draws on Marcel Duchamp's note from the *Green Box* (1936), 'Perhaps make a hinge picture', to argue that in the *Large Glass* 'we are facing a hinge picture, which as it opens out or folds back, physically and/or mentally, shows us other vistas, other

apparitions of the same elusive object'.³⁵ Paz proposes 'the logic of the hinge' as a functioning mechanism within the work.³⁶ During this period, Suzanne Duchamp was also making 'hinge picture[s]'. In *Radiation*, her forms fold into interpenetrating planes of colour, shafts of painted light and transformed readymade elements. In *Un et un menacés*, her interwoven geometries are hinged together through the juxtaposition of painted, drawn and applied readymade forms. In *Le Readymade malheureux*, Duchamp used paint alone to turn the photographed pages of a rumpled geometry textbook into a suspended structure that hovers – impossibly – like a cracked pane of glass.

When Suzanne Duchamp incorporated glass and glass-like effects into her artworks, she was working in dialogue with artistic peers in New York, particularly Marcel Duchamp and Crotti. Soon after arriving in New York, Marcel Duchamp began sharing a studio with Crotti, a period in which they both experimented with glass as a support. In Le clown (1916), Crotti created a spiral-centred mechanical figure by using lead wire to outline painted triangles and cut-out circles of coloured paper. He accentuated his glass assemblage with three glass eyes. While the vertical structure is synchronous with Un et une menacés, Crotti used a pane of glass for his translucent support, while Duchamp made her structure transparent through interconnected forms that reveal the paper upon which they are constructed. Like Duchamp, Crotti's explorations in glass combined enigmatic forms with complex language. In his Solution de continuité (1916), Crotti looped a maze of wires across a glass surface, accentuating his abstract subject further with red glass, mirrors and a pair of scissors. The title - which translates as 'Solution of Continuity' - is painted in doubled letters along with the English word 'wrong' on the glass surface. While Crotti used glass as a support for language and readymade elements, Duchamp approached the material in a more ambiguous manner by simulating glass and its effects.

Using glass as a support became almost ubiquitous within Dada. Like Marcel Duchamp and Crotti, Man Ray also worked with glass in this manner. In *Danger/Dancer* (*L'Impossibilité*) (1917–20), Man Ray spray-painted mechanical forms and the title of the work onto a pane of glass. While Man Ray applied his mechanised forms to glass with paint, Duchamp integrated glass geometries into the material structure of her paintings. Francis Naumann records that Man Ray's subject was inspired by a performance of a Spanish dancer. He also details that when Man Ray asked a mechanic to assemble

the interlocking gears for his subject, he received the sceptic retort: 'Oh! You're crazy, these wheels won't work!'³⁷ For Man Ray, however, the gears worked perfectly for him to transfer their shape onto glass with sprayed paint. He drew a relationship between the mechanical and the bodily by conflating readymade forms with the slippery language of his title. By combining the letters 'G' and 'C', Man Ray made his words dance linguistically, while his subtitle underlines the impossible nature of his machinic entity. Duchamp approached glass differently across her works. She incorporated cut-glass pieces into *Radiation*, integrated silvered objects with a glassy sheen into *Un et une menacés* and painted the form of a pane of glass in *Le Readymade malheureux*. While Man Ray, Crotti and Marcel Duchamp used glass as a support, she explored the varied possibilities of the material.

Metal

During her Dada period, Suzanne Duchamp brought the mechanical into her readymade paintings through her use of metallic materials and pigments. Beatriz Colomina's *X-Ray Architecture* (2019) offers greater cultural context for Duchamp's metallic geometries. Colomina hypothesises 'that modern architecture was shaped by the dominant medical obsession of its time – tuberculosis – and the technology that became associated with it – X-rays'. Colomina is broadly interested in 'how X-ray images[...]transformed the visual field long before the so-called avant-garde'. She focuses on the invention of the X-ray by Wilhelm Conrad Röntgen, which he first published in December 1895. The English translation of Röngten's article, 'On a New Kind of Rays, a Preliminary Communication', was accompanied by four illustrations. The bottom caption for the reproductions describes 'a piece of metal whose inhomogeneity becomes apparent with X-rays'. The second content is the content of the reproductions describes and piece of metal whose inhomogeneity becomes apparent with X-rays'.

In *Radiation*, Duchamp interrogated the 'inhomogeneity' of metals by manipulating new, malleable materials. She used gold paint and silvered tinfoil as the basis for her central pictorial structure, which she constructed by combining machine-made elements with shafts of painted coloured light. As Colomina describes, 'Röntgen's discovery was a radical transformation of the concepts of materiality and solidity, inverting the conventional understanding of what is visible and invisible'. Artists were fascinated by the visual possibilities opened up by the advent of the X-ray. László Moholy-Nagy wrote in 1946, 'The passion for the transparencies is one of the most spectacular

features of our time. In x-ray photos, structure becomes transparency and transparency manifests structure'. ⁴⁴ In her paintings, Duchamp's diverse materials interpenetrate the layers of her compositions, making paint, metals and readymade forms visible and invisible simultaneously.

Metallic finishes were emblematic of modernity for the transatlantic avantgardes. Kazimir Malevich, for example, writing in a Bauhaus publication of 1927, heralded 'the metallic culture of dynamic painting'. 45 Silver metals were of particular interest to artists and the general public alike. Indicative of their popularity is the journal Revue de l'Aluminium, first published in 1913, which was exclusively devoted to this material. While aluminium was a precious metal in the 19th century, by the 20th century it had become less expensive to produce, making it more widely available. The covers for this particular journal featured silver printed papers that simulated the effect of aluminium. Some were produced with more matte silver inks, while others had special patterns and textures. Duchamp integrated a number of different types of silvered papers and foils into her artworks, revealing her affinity for materials that simulated mechanical effects. Her use of metallic materials – particularly those with a silver hue - are related to contemporaneous works by Jean Crotti and Marcel Duchamp. Crotti's glass assemblage Les forces mécaniques de l'amour en mouvement (1916) features tin and brass metal tubing suspended behind glass, with wire delineating painted circular and geometric patterns. Tin was also the central material in Marcel Duchamp's lost readymade created in New York titled Pulled at 4 Pins (1915), which Arturo Schwarz described as a 'grey, unpainted tin chimney ventilator'. 46

Although Crotti's and Marcel Duchamp's forms resonate with those made by Suzanne Duchamp, she incorporated readymade materials into the interwoven pictorial structure of paint. Working in a different way than her brother and her husband, Duchamp manipulated store-bought elements further, turning them into more interconnected compositions. While Crotti's tubing and Marcel Duchamp's chimney reveal their predilection for objects available at the hardware store, she utilised pliable metals in *Un et une menacés* and *Radiation* that were being contemporaneously developed for various other uses in France. In particular, metal foils were used in the food and beverage industry to make labels for champagne bottles and wrapping for butter.⁴⁷ Even though these associations suggest the haptic world of the domestic instead of the more often discussed machine aesthetic, this is not

to say that Duchamp's work was especially confined to the feminine sphere. Rather, her use of metallics, and of silver materials in particular, show how far commodification penetrated everyday life during this period. Duchamp was one of many Dada artists who explored the visuality of manufactured objects in their artwork.

To this end, Francis Picabia and Duchamp often mixed metallic paints and pigments in their paintings. The gold and silver circular forms in *Révérence* (1915) relate to those in *Radiation* and its mechanical subject resonates with *Un et une menacés*. 'The metallic paint,' Adrian Sudhalter writes, 'functions as a reference to both the earthbound materiality of the machine and an ethereal, otherworldly realm'. 'As *Radiation* and *Un et une menacés*, like Révérence, are icons of modern, machine-made materials. Mary Sebera and Lauren Ross recently revealed that Picabia did not actually use precious materials in *Révérence*. Rather, the chemical composition of the silver and gold areas are consistent with metallic oil-based paints and pigments that were more often applied to radiators or other interior surfaces. ⁴⁹ Darkening in the gold areas around the edges of *Radiation* – probably due to Duchamp's handling – suggest that she likely also used a store-bought paint rather than actual gold leaf.

Duchamp and Francis Picabia both engaged with – and mixed – metals and language across mediums. In her watercolour Usine de mes pensées (1920, figure 8), she placed a group of blue and yellow architectonic forms atop a banded line of metallic silver. The title, which translates as 'factory of my thoughts', intensifies the effects of her material forms. Duchamp captures, once again, what Colomina describes as the 'X-ray effect' in which 'a mysterious inner reality [is] suspended in the ghostly medium of a translucent mass'.50 In Voilà la femme (1915), Picabia utilised multiple shades of metallic paints. His title, 'Behold the Woman' in English, conflates mechanical and gendered forms. 51 When Picabia launched his journal 391 from Barcelona in January 1917, the first four issues featured printed metallic inks, with handpainted additions of metallic pigment in the ten copies of the deluxe issue.⁵² The gilded and silvered forms of Flamenca, the cover illustration for the third issue of 391 (I March 1917), are elevated through their relationship to the title. Even though the word 'flamenca' evokes dance, Picabia's metallic machine is fixed at the centre of the printed page. Working differently, Duchamp incorporated metal - and the simulation of metallic effects - into the fluid, enlivened structures of her paintings.



Figure 8 Suzanne Duchamp, *Usine de mes pensées*, 1920. Gouache, ink and watercolor on paper, 45 x 55 cm. Galerie Natalie Seroussi. © Suzanne Duchamp / ADAGP, Paris and DACS, London 2020.

Painting, Readymade

Suzanne Duchamp's juxtaposition of painted geometries with readymade forms did not necessarily mean she did 'more intelligent things than paint', to recall Picabia's enigmatic comment. Rather, she brought a distinct material intelligence to her paintings. She used all of her materials – from language and thread to glass and metal – as means to explore and reconfigure the possibilities of the medium. Irreverently employing the word 'intelligent' to describe multiple artists in 'Carnet du Docteur Serner', Picabia's verbal jest situates Duchamp within the artistic milieu of Dada:

Marcel DUCHAMP, intelligent, a bit too occupied with women... Tristan TZARA, very intelligent not DADA enough.

RIBEMONT-DESSAIGNES, very intelligent, too well mannered...

Louis ARAGON, too intelligent...

CROTTI, converted to the religion of the Marmonds (American automobile cars).

Suzanne DUCHAMP, does more intelligent things than paint.⁵³

The more significant point is that Picabia's positioning of Duchamp pinpoints his understanding of her singular approach to working with readymades. Although often physically distant from her Dadaist peers, her work makes vivid the movement's dispersal as much as her own separation from it. Painting offered her the material ground to explore what it meant to be part of an informal group of likeminded artists and for ideas as much as materials to 'radiate' and transmit across continents. Responding to the new potential of science and technology, Suzanne Duchamp integrated machine-made elements into artworks that operate with their own geometric and material logic. They are paintings, readymade.

Notes

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