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**RETHINKING MODERN ART, SCIENCE, AND OCCULTISM  
IN LIGHT OF THE ETHER OF SPACE: WASSILY KANDINSKY,  
UMBERTO BOCCIONI, AND KAZIMIR MALEVICH<sup>1</sup>**

For much of the 20th century, art historians and critics resisted acknowledging the role that occultism might have played in the development of modern artists' theories and styles. However, a growing body of scholarship in the history of science and history of religion as well as in art history makes that position untenable for many artists<sup>2</sup>. Rather than occultism being on the fringe of culture in the late 19th and early 20th century, the occult was often closely connected to the newest developments in science

<sup>1</sup> The text is published as submitted by the author.

<sup>2</sup> The exhibition *The Spiritual in Art: Abstract Painting 1890–1985* (Los Angeles, CA: Los Angeles County Museum of Art, 1986) was the pioneering venture in the area of occultism and art, followed in Germany by *Okkultismus und Avant-garde: Von Munch bis Mondrian 1900–1915*, ed. Veit Loers (Frankfurt: Schirn Kunsthalle, 1995). More recently, the conferences sponsored by the British-based research network “Enchanted Modernities: Theosophy, Modernism, and the Arts, c. 1875–1960” (2012–2015) have contributed substantially to furthering this scholarship, as has the work of Dutch scholar Wouter Hanegraaf in establishing “Western Esotericism” as a scholarly field of study. My essay herein, which was given as a keynote lecture at the October “Rejected Knowledge” conference in Moscow, is based on several texts recently published or in press; the footnotes here and in those texts provide a sampling of relevant new scholarship in history of science and history religion. Those essays are: Linda Dalrymple Henderson, “Abstraction, the Ether, and the Fourth Dimension: Kandinsky, Mondrian, and Malevich in Context,” in *Kandinsky, Malevitch, Mondrian: Der Weisse Abgrund Unendlichkeit/The Infinite White Abyss*, ed. Marian Ackermann and Isabelle Malz, 37–55 (German), 233–44 (English) (Düsseldorf: Kunstsammlung Nordrhein-Westfalen, 2014); Henderson, “The Forgotten Meta-Realities of Modernism: *Die Uebersinnliche Welt* and the International Cultures of Science and Occultism,” in *Glass Bead* (Paris), no. 0 (2016) < <http://www.glass-bead.org/article/the-forgotten-meta-realities-of-modernism/>>; Henderson, “Malevich, the Fourth Dimension, and the Ether 100 Years Later,” in *100 Years of Suprematism*, ed. Christina Lodder (Leiden: Brill Publishers, 2018); and Henderson, “Umberto Boccioni’s *Elasticity*, Italian Futurism, and the Ether of Space,” in *Ether and Modernity*, ed. Jaume Navarro (Oxford: Oxford University Press, forthcoming).

in a period when the two fields were not seen as so clearly demarcated as later in the 20th century. This was not the science associated with Einstein and Relativity Theory, which gained prominence only as of 1919, when an eclipse expedition established one of the postulates of his theory<sup>1</sup>. Instead, this era was dominated by the paradigm of “ether physics” and a series of discoveries beginning in the 1890s, such as X-rays, the electron, and radioactivity, that suggested the existence of an invisible “meta-reality” beyond the reach of visual perception<sup>2</sup>.

What an exhilarating moment the early 20th century was for artists, whose practice for centuries had been focused on a reality defined by visible light. Turn-of-the-century science also offered occultists and artists alike compelling new evidence for rejecting materialism and positivism. As the late British historian and critic Charles Harrison asserted in 1993, “If we are adequately to assess artists’ intentions and actions in the light of historical conditions, it will be necessary to include among those conditions what it was possible to *imagine*<sup>3</sup>”. The invisible realities suggested by science *and* occultism were indeed a critical component of “what it was possible to imagine” for artists such as Wassily Kandinsky, Umberto Boccioni, and Kazimir Malevich. An art history that ignores the broad cultural context of any period is a highly inadequate one. In addition, restoring the cultures of both early 20th-century occultism and science to art history points up the *international* currents of information circulating in this period. Books and occult journals, in particular, served as a kind of internet before the fact, transmitting ideas, including the latest science, to layperson and artists, regardless of national boundaries. If we sense resonances among the ideas of modern artists in a variety of locales, it was this substructure that assured that modernism would be a truly international phenomenon<sup>4</sup>.

Before turning to specific artists, it is important to clarify the popular scientific world view of the 1890s through the 1910s, a milieu that was eclipsed by Einstein’s rise to fame as of late 1919. That new conception of reality, with its focus on the invisible, emerged as a result of a series of widely popularized

<sup>1</sup> On the principles and delayed popularization of Relativity Theory (both the Special Theory of 1905 and the General Theory of 1915), see, e.g., Helge Kragh, *Quantum Generations: A History of Atomic Physics in the Twentieth Century* (Princeton: Princeton University Press, 1999), 90–104.

<sup>2</sup> I first made the argument for the ether’s relevance in L.D. Henderson, “Die modern Kunst und das Unsichtbare: Die verborgenen Wellen und Dimensionen des Okkultismus und der Wissenschaften,” in *Okkultismus und Avant-garde*, ed. Loers, 13–31; and Henderson, “Vibratory Modernism: Boccioni, Kupka, and the Ether of Space,” in *From Energy to Information: Representation in Science and Technology, Art, and Literature*, ed. Linda Dalrymple Henderson and Bruce Clarke (Stanford: Stanford University Press, 2002), 126–49. For contemporary German scholarship on the ether in twentieth-century culture, see, e.g., Albert Kümmel-Schnur and Jens Schröter, eds., *Aether: Ein Medium der Moderne* (Bielefeld: transcript Verlag, 2008).

<sup>3</sup> See Charles Harrison, “Abstraction,” in Harrison, Francis Frascina, and Gill Perry, *Primitivism, Cubism, Abstraction: The Early Twentieth Century* (New Haven: Yale University Press, 1993), 226.

<sup>4</sup> On this subject, see Henderson, “Forgotten Meta-Realities of Modernism.”

discoveries in physics in the 1890s<sup>1</sup>. X-rays, discovered by Roentgen in 1895, made solid matter transparent and raised fundamental questions about the adequacy of the eye as a sensing instrument. Further challenges to the solidity of matter followed with Becquerel's discovery of radioactivity in 1896, J.J. Thomson's identification of the electron in 1897, and, especially, the subsequent work of the Curies and Ernest Rutherford on radioactivity. Popular science writers regularly suggested that all matter might be radioactive, offering the image of objects endlessly emitting particles into the surrounding ether, a view widely promulgated by French author Gustave Le Bon in bestselling books such as *L'Evolution de la matière* of 1905<sup>2</sup>. At the same time, the prominent physicist Sir Oliver Lodge argued that the ether itself might be the source of matter in his "electric theory of matter," grounded in the interaction of electrons and the ether. Both Kandinsky and Boccioni in their major treatises cite the electric theory of matter by name<sup>3</sup>.

The invisible space-filling ether is perhaps the major lacuna in historian's knowledge of early 20th-century science (and occultism). Yet, it was a central part of the late 19<sup>th</sup>- and early 20<sup>th</sup>-century world view, and it is crucial to recover a sense of its importance in this era. A "luminiferous ether" had been a part of physics since the 1820s in conjunction with Fresnel's wave theory of light; what was novel about the ether in the later 19th century were the many new functions being attributed to it. Lodge's "electric theory of matter" updated Lord Kelvin's "vortex theory of the atom" as based on whirling vortices of ether. Beyond visible light, ether vibrations were now also understood as the vehicle for X-rays and the Hertzian waves of wireless telegraphy, which, as a cultural phenomenon, focused public attention on the ether<sup>4</sup>. The sense of possibility offered by the ether is clear in Sir William Crookes's declaration in his 1888 address before the British Association for the Advancement of Science that "ether vibrations have powers and attributes equal to any demand – even to the transmission of thought<sup>5</sup>".

<sup>1</sup> On these discoveries, see, e.g., L.D. Henderson, "Editor's Introduction: I. Writing Modern Art and Science – An Overview; II. Cubism, Futurism, and Ether Physics in the Early Twentieth Century." *Science in Context*, 17 (Winter 2004), 423–66. See also, e.g., Alex Keller, *The Infancy of Atomic Physics: Hercules in His Cradle* (Oxford: Clarendon Press, 1983).

<sup>2</sup> See Gustave Le Bon, *L'Evolution de la matière* (Paris: Ernest Flammarion, 1905).

<sup>3</sup> See Sir Oliver Lodge, "Electric Theory of Matter," *Harper's Monthly Magazine*, 109 (Aug. 1904), 383–89. See Kandinsky, *On the Spiritual in Art*, in *Kandinsky: Complete Writings on Art*, ed. Kenneth C. Lindsay and Peter Vergo (New York: Da Capo, 1994), 142. See also Umberto Boccioni, *Pittura scultura futurista (dinamismo plastico)* (Milan: "Poesia," 1914), 105; and Boccioni, *Futurist Painting Sculpture (Plastic Dynamism)*, trans. Richard Shane Agin and Maria Elena Versari (Los Angeles: Getty Research Institute, 2015), 155.

<sup>4</sup> On the history of the ether, see, e.g., G.N. Cantor and M. J.S. Hodge, *Conceptions of Ether: A Study in the History of Ether Theories 1740–1900* (Cambridge: Cambridge University Press, 1981); and P.N. Harman, *Energy, Force, Matter: The Conceptual Development of Nineteenth-Century Physics* (Cambridge: Cambridge University Press, 1982).

<sup>5</sup> Sir William Crookes, "Address by Sir William Crookes, President," *Report of the Sixty-Eighth Meeting of the British Association for the Advancement of Science (1898)* (London: John Murray, 1899), 31.

Understood to fill all space with no gap in its “infinite continuity,” as James Clerk Maxwell had declared, the ether required two seemingly contradictory qualities<sup>1</sup>. In order to transmit vibrating electromagnetic waves, the ether required the rigidity of an elastic solid; at the same time, it must allow the free motion of bodies through it and be rarefied enough to flow through the interstices of even the densest matter. Writers on the ether – from scientists and popular science writers to occultists – regularly relied on metaphor to convey something of the nature of the mysterious substance and its behavior, including an elastic jelly or whirling fluid as well as smoke, the passage of water through a sieve, and even steam. Science writer Robert Kennedy Duncan, for example, talked in his 1905 book *The New Knowledge* of our bodies “soaking in [the ether] like a sponge lies soaking in water,” and concluded, “How much we ourselves are matter and how much ether is, in these days, a very moot question<sup>2</sup>”.

For occultists, including Theosophists as well as Anthroposophy’s founder Rudolf Steiner, the ether offered a powerful model both for vibratory thought transfer and for the interpenetration of spirit and matter on the model of the continuum formed by ether/matter interactions. Steiner was particularly attuned to contemporary science, and in 1904 he included in his journal *Lucifer Gnosis*, which Kandinsky owned, excerpts from Lord Balfour’s Presidential Address before the British Association of that year. There he had asserted, “It seems now that [the ether] may be the stuff out of which [the] universe is wholly built<sup>3</sup>”. Theosophists Annie Besant and C.W. Leadbeater likewise commented prominently on contemporary science, including the ether, in the original introduction to their 1905 book *Thought-Forms*: “Ether is now comfortably settled in the scientific kingdom, becoming almost more than a hypothesis. . . . Roentgen’s rays have rearranged some of the older ideas of matter, while radioactivity has revolutionized them, and is leading science beyond the borderland of the ether into the astral world<sup>4</sup>”. In fact, ether physics played a vital role in making aspects of Theosophical doctrine, such as the “ether body” or “etherial body,” understandable to an early 20th-century audience.

In this era the boundary between science and occultism generally acknowledged today was not at all clear cut. Lodge, Crookes, and French astronomer Camille Flammarion were all interested in various aspects occultism, from spiritualism to telepathy, subjects of investigation for the Society for

<sup>1</sup> Maxwell, as quoted in Oliver Lodge, *The Ether of Space* (New York and London: Harper & Brothers, 1909), 114.

<sup>2</sup> Robert Kennedy Duncan, *The New Knowledge* (New York: A.S. Barnes, 1905), 5.

<sup>3</sup> A.J. Balfour, “Address by The Right Hon. A.J. Balfour,” *Report of the Seventy-Fourth Meeting of the British Association for the Advancement of Science (1904)* (London: John Murray, 1905), 7. For Steiner’s quoting from Lord Balfour, see Sixten Ringbom, *The Sounding Cosmos: A Study in the Spiritualism of Kandinsky and the Genesis of Abstract Painting* (Åbo, Åbo Akademi, 1970), 37.

<sup>4</sup> See Annie Besant and C[harles] W[ebster] Leadbeater, *Thought-Forms* (London: Theosophical Publishing Society, 1905), 11.

Psychical Research of which they and many other prominent figures, such as psychologist William James, were members. Lodge's, Crookes's, and Flammarion's lectures and writings were widely noted on the international network of both Theosophical and spiritualist publications. Kandinsky, for example, owned copies (of 1908/1909) of the monthly Berlin spiritualist journal *Die Übersinnliche Welt*, which provided regular translations of articles from publications in England, France, and Italy<sup>1</sup>. Translations of popular scientific books occurred regularly as well – with texts such as Lodge's 1909 *The Ether of Space* translated into Russian in 1911 and Gustave Le Bon's *L'Evolution de la matière* in 1912<sup>2</sup>.

Turning first to Kandinsky, his involvement with the occult is perhaps the most fully documented of that of any modern artist. Sixten Ringbom's *The Sounding Cosmos* of 1970 set forth a convincing case for Kandinsky's engagement with a broad occult culture, including Theosophy and other sources. However, his first article on the subject, published in 1966, had focused more specifically on Besant and Leadbeater's *Thought-Forms*, and that oversimplification became a leitmotif in discussions of Kandinsky and the occult<sup>3</sup>. Rose-Carol Washton Long's writings during the 1970s and her 1980 book *Kandinsky: The Development of an Abstract Style* countered Ringbom's emphasis on *Thought-Forms* by emphasizing the Anthroposophy of Steiner as a key stimulus for Kandinsky. She argued that Kandinsky, drawing on Steiner, used veiled or hidden imagery of the Apocalypse and Last Judgement to make a gradual transition to abstraction and sensitize his viewers for the coming "epoch of the Great Spiritual"<sup>4</sup>. This essay broadens such considerations of Kandinsky's art and theory by considering the prominence of the vibratory ether in the Theosophical and other occult sources he read as well as in contemporary science.

In one of the most effective close readings of Kandinsky's stylistic evolution to date, Reinhard Zimmermann has discussed the artist's "breakthrough to abstraction" during 1911 to 1913 in an analysis highly applicable to works such as the *Composition VI*. Acknowledging Kandinsky's and Gabriele Münter's well-established interest in "theosophical and occult notions" of an invisible "'second level' of reality that . . . is by nature ethereal and manifests itself above all in auras and thought forms," he writes perceptively.

<sup>1</sup> Ringbom in *The Sounding Cosmos* first noted the presence of the issues of the journal in Kandinsky's archive; see Henderson, "Forgotten Meta-Realities."

<sup>2</sup> See Sir Oliver Lodge, *Mirovoj ethir* (Odessa: Mathesis, 1911); and Gustave Le Bon, *Evolutsia materii* (St. Petersburg, 1912).

<sup>3</sup> See Sixten Ringbom, "Art in 'The Epoch of the Great Spiritual': Occult Elements in the Early Theory of Abstract Painting," *Journal of the Warburg and Courtauld Institute*, 29 (1966), 386–418; see also Ringbom, *Sounding Cosmos*.

<sup>4</sup> See Rose-Carol Washton Long, *Kandinsky: The Development of an Abstract Style* (Oxford: Clarendon, 1980). For the "epoch of the great spiritual," see e.g., Kandinsky, *On the Spiritual in Art*, in *Kandinsky: Complete Writings on Art*, ed. Kenneth C. Lindsay and Peter Vergo (New York: Da Capo, 1994), 219.



Wassily Kandinsky,  
Composition VI, 1913.  
Hermitage Museum,  
St. Petersburg

The various colour zones have the appearance of free-floating mists or coloured billows of steam; sometimes they look like swathes of clouds. ...In this composition [*Painting with Red Spots I*] matter seems to have shifted into a different physical condition; it is as though it has liquefied, dematerialized. ...[T]he colour planes... are organized independently of the lineature; ...An ethereal colour substance seems to fill the pictorial space... [The] objects have been dematerialized; they have lost their physical presence. For Zimmermann, the result is an “indefinable, ethereal space”... “in keeping with the artist’s occult, theosophical concept of bodies and space<sup>1</sup>”.

While Zimmermann is completely correct in evoking an “ethereal” realm he associates with Theosophy, Kandinsky would have derived support for such a view of matter and space from a much broader range of sources than simply the “thought-forms” and auras of Besant and Leadbeater. For Kandinsky and other early 20th-century artists, the ether was much more than simply a metaphorical concept (“ethereal” as an adjective) or one identified solely with Theosophical “thought-forms.” He was, in fact, responding not only to Theosophical sources and Steiner’s ideas, themselves grounded in ether physics, but also to popular scientific writing and the work of other occultists or occult-oriented scientists interested in the ether, including the Parisians Hippolyte Baraduc and Albert de Rochas. Kandinsky’s belief that his paintings could cause a “vibration in the soul of the viewer,” as he said, found support in a variety of places – from Crookes’s widely cited declaration about the vibratory “transfer of thought” through the ether to figures like Baraduc, who was photographing patterns of vibrating ether he believed

<sup>1</sup> For this discussion, see Reinhard Zimmermann, “Early Imprints and Influences,” in *Kandinsky: The Path to Abstraction* (London: Tate Modern, 2006), 36, 39, 40, 42.

embodied thought, and Rochas's 1895 *L'Extériorisation de la sensibilité*.<sup>1</sup> Indeed, in their 1901 *Thought-Forms*, Besant and Leadbeater themselves cited Baraduc as their "scientific counterpart". *Thought-Forms* was just one manifestation of a much larger fascination with vibratory thought communication in this period, which included not only Crookes, but also other scientist advocates of telepathy such as the physicist Lodge and astronomer Flammarion.

If the ether was central to Kandinsky's conception of painting as a communication between the artist as a "sender" and the viewer as a "receiver," it is also a key to the dematerialized imagery of his mature abstractions, such as *Composition VI*.<sup>5</sup> In his first steps toward abstraction Kandinsky had utilized veiled or hidden imagery, but his ultimate goal was to communicate with viewers via pure color and form. Recovering the early 20th-century focus on the ether sheds critical new light on Kandinsky's understanding of the "matter" he was dematerializing.

In *On the Spiritual in Art* Kandinsky writes of "professional men of learning who test matter again and again, who tremble before no problem, and who finally cast doubt on the very *matter* which was yesterday the foundation of everything, so that the whole universe rocks. The electron theory – i.e. the theory of moving electricity, which is supposed completely to replace matter has found lately many keen proponents. . . ."<sup>4</sup> Similarly, the artist's well-known reference to the "collapse" or "further division of the atom" in his 1913 "Reminiscences," which has sometimes been read negatively, was clearly a positive response to the turn-of-the-century ferment in the wake of the discoveries of the electron and radioactivity and ideas of the ether as the possible source of matter.<sup>5</sup>

Theosophists like Leadbeater and Steiner regularly talked about degrees of rarefaction of matter as one progressed from the physical body to the "ether body" to the astral body.<sup>6</sup> Kandinsky would have found a similar

<sup>1</sup> For the vibration theme, see the numerous references in Wassily Kandinsky, *On the Spiritual in Art* (1911), in *Kandinsky: Complete Writings on Art*, ed. Kenneth C. Lindsay and Peter Vergo (New York: Da Capo, 1994), 87, 89, 129, 147, 157–58, 160, 169, 210–11, 241. On Baraduc and Rochas, see, e.g., Henderson, "Vibratory Modernism"; on these figures and Kandinsky, see Ringbom, *Sounding Cosmos*, 54–55, 122–23. For a fuller discussion of Kandinsky's French sources, including photographer Louis Darget, see Henderson "Bilder der Frequenz. Moderne Kunst, elektromagnetische Wellen und der Äther im frühen 20. Jahrhundert," in *Archiv für Mediengeschichte 11 (Takt und Frequenz)*, ed. Friedrich Balke, Bernhard Siegert, and Joseph Vogl (Munich: Wilhelm Fink, 2011), 51–65, as well as the essays on Kandinsky by Andreas Fischer and Veit Loerrs in Schirn Kunsthalle, *Okkultismus und Avant-Garde*.

<sup>2</sup> See Besant and Leadbeater, *Thought-Forms*, 12.

<sup>3</sup> See Kandinsky, *On the Spiritual in Art*, in *Complete Writings*, ed. Lindsay and Vergo, 241.

<sup>4</sup> *Ibid.*, 142.

<sup>5</sup> Kandinsky, "Reminiscences/Three Pictures" (1913), in *Complete Writings*, ed. Lindsay and Vergo, 364.

<sup>6</sup> See, e.g., C.W. Leadbeater, *Man Visible and Invisible* (New York: John Lane, 1903), 12; and Rudolf Steiner, *Theosophy: An Introduction to the Supersensible Knowledge of the World and the Destination of Man*, trans. E. D. S. (Chicago: Rand-McNally, 1910), 32–33.

discussion in one of the books in his extensive library, Yogi Ramacharaka's *Fourteen Lessons in Yogi Philosophy and Oriental Occultism* (1911 edition). "Yoga Ramacharaka," the pen name of William Ward Atkinson (founder of the American New Thought movement), explained etherial phenomena like the astral body or the thought projections central to his book by using the model of steam<sup>1</sup>. Just as ice, water, and steam are all the same chemical substance, they exist in radically different forms, according to the rates of vibration of their molecules; steam thus served as a counterpart to ether on a scale from condensation to dissolution. According to Yogi Ramacharaka, thought "is like a thin vapor. . . and is just as real as the air around us or the vapor of steam or the numerous gases with which we are acquainted<sup>2</sup>". And he connected this vaporous thought back to the ether: "When one 'thinks' he sets up vibrations of greater or lesser intensity in the surrounding ether, which radiate from him in all directions<sup>3</sup>".

Kandinsky himself utilized a comparison to steam in discussing his painting *Composition VI*, and ether as dematerialized matter might well be what he is depicting, in part, in his mature paintings. In 1913 he wrote of the center section of the painting, "Here the pink and the white. . . appear as if hovering in the air, as if surrounded by steam." Citing the effects of a Russian steam bath, he continues, "A man standing in the steam is neither close nor far away, he is just somewhere. The feeling of 'somewhere' about the principal center determines the inner sound of the whole picture<sup>4</sup>". Here Kandinsky's reference to steam, like the smoke and fog that served as metaphors for the elusive ether, carries additional resonances when his paintings are read in context. It is truly an indefinable, ether-like space the artist creates — "neither close nor far away."

With their visual and aural *Klang*, Kandinsky's dynamic, non-material forms create the effects of "dissonance" both he and his composer friend Arnold Schoenberg believed could lead to the "consonance of 'tomorrow'" — i.e., the harmonious, spiritual future in which he believed<sup>5</sup>. Kandinsky's art and theory were clearly nourished by the early 20th-century milieu of ether physics that resonated so closely with his readings in Theosophy and other occult sources. He was not operating on the fringe in this period; he was in the mainstream in engaging the popular scientific and occult cultures of his time.

The stereotype of the Italian Futurists is of artists completely dedicated to technology as the revolutionary force that could transform agrarian Italy

<sup>1</sup> See Yogi Ramacharaka [William Ward Atkinson], *Fourteen Lessons in Yogi Philosophy and Oriental Occultism* ([Chicago]: Yogi Publication Society, 1903), 10.

<sup>2</sup> *Ibid.*, 78.

<sup>3</sup> *Ibid.*, 94.

<sup>4</sup> Kandinsky, "Reminiscences/Three Pictures," in *Complete Writings on Art*, ed. Lindsay and Vergo, 387; Kandinsky also discusses vibration in this section.

<sup>5</sup> Kandinsky letter to Arnold Schoenberg, January 18, 1911, in *Arnold Schoenberg/Wassily Kandinsky: Letters, Pictures, Documents*, ed. Jelena Hahl-Koch, trans. John C. Crawford (London: Faber and Faber, 1984), 21.



as well as poetry and art. In recent decades, however, Italian scholars, such as Germano Celant, Simone Cigliana, and Luciano Chessa, have brought to light the Futurists' deep involvement with spiritualism and Theosophy<sup>1</sup>. As in the case of Kandinsky, it is vital to recognize the close relationship of occultism and ether physics in this period and the international circulation of such ideas.

Boccioni made clear his interest in both science and occultism in the 1910 "Technical Manifesto of Futurist Painting": "Who can still believe in the opacity of bodies since our sharpened and multiplied sensitiveness has already penetrated the obscure manifestations of the medium? Why should we forget in our creations the doubled power of our sight, capable of giving results analogous to those of the X-rays?"<sup>2</sup> In a 1911 lecture he declared, "What needs to be painted is not the visible but what has heretofore been held to be invisible, that is, what the clairvoyant painter sees"<sup>3</sup>.

Boccioni clarified his scientific interests most fully in his 1914 treatise *Pittura scultura futuriste*, written by 1913. Citing phenomena such as Hertzian waves and the "electrons [that] revolve in the atom by tens of thousands," he writes: "Why be terrified of moving away from traditional representation? The electric theory of matter, according to which matter would be only energy, condensed electricity, and would exist only as *force*, is a hypothesis that increases the certainty of my intuition. ...The most recent scientific hypotheses, the endless possibilities offered by chemistry, physics, biology and all science's discoveries, the life of the infinitesimally small, the fundamental unity of the energy that gives us life, everything pushes us to create through our plastic sensibility analogies with these new and marvelous conceptions of nature"<sup>4</sup>.

Boccioni's monumental portrait of his mother of summer 1912, *Materia* [Matter], demonstrates his creative response to contemporary science and occultism, including the fascination with new invisible vibrating waves, suggested here by the rays streaming down upon the figure. On the model of radioactivity, in which he was deeply interested, his mother's mass seems to dissolve into its surroundings (or cohere from them), a process emphasized by the particulate light greenish-blue strokes on the surface of the canvas. Here Boccioni creates an image of continuous diffusion and cohesion

<sup>1</sup> See Germano Celant, "Futurism and the Occult," *Artforum*, 19 (Jan. 1981), 36–42; Simona Cigliana, *Futurismo esoterico* (Naples: Liguori Editore, 2002); and Luciano Chessa, *Luigi Russolo, Futurist: Noise, Visual Arts, and the Occult* (Berkeley: University of California Press, 2012).

<sup>2</sup> Boccioni et al., "Futurist Painting: Technical Manifesto" (April 1910), in *Futurist Manifestos*, ed. Umbro Apollonio, trans. Robert Brain, W.W. Flint, J.C. Higgitt, and Caroline Tisdall (New York: Viking Press, 1970), 28.

<sup>3</sup> Boccioni, "Selected Notes for a Lecture on Futurist Painting" appended to "Lecture before the Circolo Artistico, Rome, May 29, 1911," in Ester Coen, *Umberto Boccioni* (New York: The Metropolitan Museum of Art, 1988), 239.

<sup>4</sup> Boccioni, *Pittura scultura futuriste*, 327–29; Boccioni, *Futurist Painting Sculpture (Plastic Dynamism)*, trans. Richard Shane Agin and Maria Elena Versari (Los Angeles: Getty Research Institute, 2015), 155–56 (with slight variation in translation by LDH).

Umberto Boccioni,  
*Matter*, 1912. Gianni  
Mattioli Collection,  
on long-term loan  
to the Peggy  
Guggenheim  
Collection, Venice



suggestive of the radioactive emissions observable in the contemporary parlor toy, the spinthariscopes. In *Materia* he realized the goal he had announced to Carlo Carrà in an April 1912 letter, “I’m not interested in anything but matter expressed according to myself<sup>1</sup>.”

Boccioni’s painting *Elasticity* of fall 1912 has a similar quality of fluidity, although here his focus seems now to be on the space-filling ether itself. Although this painting is usually discussed in terms of the muscular elasticity of the horse and rider, the term “elasticity” had a new prominence in this period as a basic characteristic of the ether<sup>2</sup>. Boccioni painted *Elasticity* at a time he had also begun to explore sculpture, and he would connect his well-known *Unique Forms of Continuity in Space* of 1913 (The Museum of Modern Art, New York) specifically to the “materialization of the fluid, of the etherial, the imponderable” in the concluding section of *Pittura scultura futurista*. “We want to model the atmosphere,” Boccioni declares, using his synonym for the ether<sup>3</sup>. And his frequently mentioned goal of the “solidification of Impressionism” responds specifically to new energy-oriented ideas about the ether in the early 20th century that moved beyond the diaphanous, light-filled ether of the Impressionists or even the impalpable ether that engaged Kandinsky<sup>4</sup>.

Boccioni may well have been first introduced to the new ideas about the ether in the context of Theosophy. His diary entries of 1908 show him grappling with issues of belief and rejecting “the monopoly of one church,” since humanity is, as he states, “on the eve of universal brotherhood,” one of the three stated “Objects of the Theosophical Society<sup>5</sup>”. In a December 1907 diary entry he had queried, “– how, where,

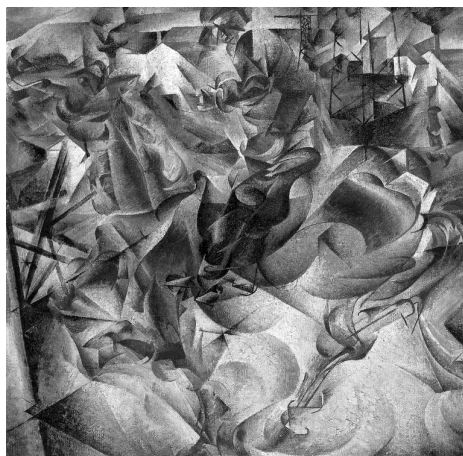
<sup>1</sup> Boccioni letter to Carlo Carrà [mid-April 1912]; quoted in Flavio Fergonzi, “On the Title of the Painting *Materia*,” in *Boccioni’s Materia: A Futurist Masterpiece of the Avant-garde in Milan and Paris*, ed. Laura Mattioli Rossi (New York: The Solomon R. Guggenheim Museum, 2004), 50. Boccioni was also an admirer of the philosopher Henri Bergson, whose philosophy of flux and continuity was itself grounded in ether physics; see e.g., Henderson, “Umberto Boccioni’s *Elasticity*.”

<sup>2</sup> On *Elasticity*, see, e.g., Marianne W. Martin, *Futurist Art and Theory 1909–1915* (Oxford: Clarendon Press, 1968), 153.

<sup>3</sup> Boccioni, *Pittura scultura futurista*, 325; see also Boccioni *Futurist Painting Sculpture*, trans. Agin and Versari, 155 (with slight variation in translation by LDH).

<sup>4</sup> See, e.g., Boccioni, “Plastic Foundations of Futurist Sculpture and Painting,” in *Futurist Manifestos*, ed. Apollonio, 89.

<sup>5</sup> Boccioni, Diary entry, March 22, 1908, in Coen, *Umberto Boccioni*, 260. The three “Objects of the Theosophical Society,” including “To form a nucleus of the Universal Brotherhood of Humanity, without distinction of Race, Creed, Sect, Caste, or color,” were regularly printed in publications of the Theosophical Publishing Society.



when can I study all that chemistry and physics?,” and the following passage from the 1907 Manuali Hoepli edition of Giuseppe Giordano’s *Teosofica* suggests such a text as his stimulus: “By now, anybody who keeps up with the modern scientific movement is no longer unaware that recent decades have seen a rapid succession of the most marvelous and surprising discoveries in the field of Chemistry and Physics; and that, thanks to

a multitude of famous scientists... , the concept that we had twenty years ago of... various forms of energy, and of matter in general, has been entirely transformed<sup>1</sup>.”

As noted earlier, the Theosophists Besant and Leadbeater, whose works were regularly translated into French and Italian, drew extensively on ether physics. Thus, Besant writes in her discussion of the “Etheric Double” in *Man and His Bodies* of 1896: “Modern physical science holds that all bodily changes, whether in the muscles, cells, or nerves, are accompanied by electric action, and the same is probably true of the chemical changes which are continually going on. . . . Whenever electric action occurs ether must be present, so that the presence of the current is proof of the presence of the ether, which interpenetrates all, surrounds all ...<sup>2</sup>” Here Besant touches on themes highly relevant for Boccioni’s *Elasticity*: muscles, electricity, and ether. And the source for her erudition on electricity and ether was surely Lodge, whom she and Leadbeater would quote directly in their Appendix on “The Aether of Space” in their book *Occult Chemistry* of 1908<sup>3</sup>.

As suggested earlier, Lodge was a highly sympathetic figure for occultists, and his prolific writing brought his views of the centrality of the ether to a broad public. In 1894, at the invitation of French physiologist Charles Richet, Lodge had participated in seances with the Italian medium Eusapia Palladino, and from this experience he had concluded that “certain phenomena of this class may, under certain conditions, have a real and objective

Umberto Boccioni,  
Elasticity, 1912  
Pinacoteca Brera,  
Milan, Jucker  
Collection

<sup>1</sup> See Giuseppe Giordano, *Teosofia* (Milan: Ulrico Hoepli, 1907), 221. For Boccioni’s diary entry, see Coen, *Boccioni*, 257.

<sup>2</sup> Annie Besant, *Man and His Bodies* (London: The Theosophical Publishing Society, 1900), 27.

<sup>3</sup> See Annie Besant and C.W. Leadbeater, *Occult Chemistry: A Series of Clairvoyant Observations on the Chemical Elements* (London: Theosophical Publishing Society, 1908), Appendix: “The Aether of Space” (i-x). See also Annie Besant and C.W. Leadbeater, *L’Etere dello spazio* [A Translation of the Appendix of “Occult Chemistry” entitled “The Aether of Space”] (Genoa: Tip. A. Ciminago, 1908).

existence<sup>1</sup>.” Lodge was also in contact with well-known Italian psychical researcher and criminologist Cesare Lombroso, who cited Lodge repeatedly in his publications. For example, in a section of his 1909 *Ricerche sui fenomeni ipnotici e spiritici* titled “Radio-Activity” he invokes Lodge’s idea that spirits might possess an “etherial body,” allowing them to build up a “material body capable of manifesting itself<sup>2</sup>”. Such a presence in occult literature, especially his openness to the theme of materialization from the ether, would have made the British physicist’s writings of particular interest to the Futurists.

From Boccioni’s specific citing of the “electric theory of matter,” it is clear that he had encountered Lodge’s ideas on electrons and the ether, which would have been accessible in a variety of sources. These included Besant and Leadbeater’s Appendix to *Occult Chemistry*, which was translated into Italian and published under their names<sup>3</sup>. Lodge’s ideas also figured regularly in *Ultra*, the leading Italian Theosophical journal.

In contrast to the seemingly diaphanous ether of the 19th century, Lodge’s writings on the ether around 1908 suggest a structural field of great density as well as great energy and huge velocities, themes at the heart of Futurism. As Lodge explains, “... [the ether] possesses that property of “rigidity,” or elastic resilience to “shear,” which is characteristic of what we would ordinarily call a solid; wherefore it would appear that it must be, throughout, in such a state of excessively fine-grained turbulent motion as would confer this property upon it. ...It is the gyrostatic kind of elasticity. . . whereby a perfect fluid can kinetically acquire some of the properties of a perfect solid<sup>4</sup>”.

How provocative Lodge’s further discussion of the ether would have been for Boccioni and the Futurists: “This is the theory then – this theory of elasticity as dependent on motion – which, in combination with the estimate of density, makes the internal energy of the ether so gigantic. For in every cubic millimeter of space we have. . . a mass equivalent to what, if it were matter, we should call a thousand tons, circulating internally. . . with a velocity

<sup>1</sup> Oliver J. Lodge, “Experience of Unusual Psychic Phenomena Occurring in the Presence of an Enraptured Person (Eusapia Paladino [sic]),” *Journal of the Society for Psychical Research*, 6 (Nov. 1894), 307–8. On this and other seances in which Lodge participated, see, e.g., Courtney Grean Raia, “Ether Theory to Ether Theology: Oliver Lodge and the Physics of Immortality,” *Journal of the History of the Behavioral Sciences*, 43 (Winter 2007), 19–43; Noakes, “Haunted Thoughts of the Careful Experimentalist: Psychical Research and the Troubles of Experimental Physics,” *Studies in the History and Philosophy of Biological and Biomedical Sciences*, 48 (2014), 46–56; and Janet Oppenheim, *The Other World: Spiritualism and Psychical Research in England, 1850–1914* (Cambridge: Cambridge University Press, 1985), 150–51.

<sup>2</sup> Cesare Lombroso, *After Death What? Spiritistic Phenomena and Their Interpretation [Ricerche sui fenomeni ipnotici e spiritici]*, trans. William Sloane Kennedy (Boston: Small, Maynard & Co., 1909), 187–88.

<sup>3</sup> See again 228, n. 3.

<sup>4</sup> Sir Oliver Lodge, *Modern Views of Electricity* (London: Macmillan and Co., 1907), 319. For a fuller version of the discussion of Lodge’s views on the ether noted here, see Henderson, “Umberto Boccioni’s *Elasticity*, Italian Futurism, and the Ether of Space.”

comparable to the velocity of light, and therefore containing. . . an amount of energy... equal to the energy of a million horse-power station working continuously for forty million years<sup>1</sup>”.

It is in this context that we can finally better understand both the form and subject matter of Boccioni's *Elasticity* and his subsequent works. Ether is the unifying component here, filling all space and, in Lodge's words, serving as “the substratum of what appeals to our senses as matter<sup>2</sup>”. This elastic ether is a robust, energy-laden entity. Futurist “force-lines,” the concept Boccioni had borrowed from the ether physics of Maxwell, have become “force-forms,” as he terms them, here expressed as folds and “shears” of the ether<sup>3</sup>.

At the conclusion of *Pittura scultura futuriste* Boccioni writes of the ether:

We ought to realize that if this infinite, this imponderable, this invisible is becoming increasingly an object of investigation and observation, it's because in the mind of the *moderns*, some marvelous sense is being awakened within the unknown depths of consciousness.

Our Futurist audacity has already forced open the gates of an unknown world. We are already creating something analogous to what the physiologist [Charles] Richet calls *heteroplastic* [eteroplastica] or *ideoplastic* [ideoplastica]. The biological mystery of mediumistic materialization is for us a *certainty*, a clarity in the intuition of physical transcendentalism and of plastic states of mind<sup>4</sup>.

Although Richet's term was “heteroplastic” [eteroplastica], Boccioni could well have coined the term *eterplastica* or “etherplastic” to signify his commitment to materializing the ether as he discovered it in both its occult and scientific contexts. And that idea applies equally well to paintings such as his 1913 *Dynamism of a Soccer Player* (The Museum of Modern Art, New York) and to sculptures like *Unique Forms of Continuity in Space*. Whether using painterly chiaroscuro to create dynamic “force-forms” in painting or sculpting them in clay, Boccioni was seeking to model a new kind of sculptural atmosphere or ether. Recovering the ether clarifies in vital new ways Boccioni's grounding in the occult and scientific ideas of his day.

Italian Futurist art and manifestos, with their frequent scientific and occult references, were crucial stimuli for the development of Russian avant-garde painting, including the work of Malevich, such as *Painterly Realism of a Football [Soccer] Player: Color Masses in the Fourth Dimension*<sup>5</sup>. Yet, as Malevich's title suggests, there was a difference in focus between Boccioni and Malevich in terms of their response to conceptions of invisible realities. For Boccioni,

<sup>1</sup> Lodge, *Ether of Space*, 103, 123.

<sup>2</sup> Lodge, *Modern Views of Electricity*, 3.

<sup>3</sup> For Boccioni's use of “force-form,” see his “Preface, First Exhibition of Futurist Sculpture” (Paris, June 1913), in *Modern Artists on Art*, ed. Robert L. Herbert (Englewood Cliffs, NJ: Prentice-Hall, 1964), 48.

<sup>4</sup> Boccioni, *Pittura scultura futuriste*, 328–29; Boccioni, *Futurist Painting Sculpture*, trans. Agin and Versari, 156 (with slight variation in translation by LDH).

<sup>5</sup> On the impact of Italian Futurism in Russia, see Charlotte Douglas, “The New Russian Art and Italian Futurism,” *Art Journal*, 34 (Spring 1975), 229–39.

the ether was a primary element of his theories and the idea of a fourth dimension only a passing concern<sup>1</sup>. By contrast, for Malevich and his colleagues, the fourth dimension, as they discovered it in the writings of P.D. Ouspensky, was central. Nonetheless, Ouspensky himself was a product of the occult/scientific milieu of the early 20th century and was well aware of the connections regularly drawn between the fourth dimension and the ether. With their interest in the fourth dimension, Malevich and his colleagues would certainly have been aware of such links as well.

A possible suprasensible dimension of space was a topic of much speculation in popular culture from the 1880s onward, and many modern artists responded to this aspect of the invisible realities that fascinated the early 20th century<sup>2</sup>. If space had four dimensions, our world would be merely a three-dimensional section of it, akin to a two-dimensional plane embedded in our space. This notion, also occluded by Einstein, who redefined the fourth dimension as time in the space-time continuum of Relativity Theory, has come back in culture in recent decades in the context of the emergence of computer graphics and of string theory in physics, which suggests the universe may have ten or eleven dimensions<sup>3</sup>.

In the wake of the discovery of the X-ray, no one could say a fourth dimension did not exist simply because it could not be seen. Like the ether, the fourth dimension suggested answers to all kinds of mysteries, and it was embraced by spiritualists and Theosophists alike. The original “hyperspace philosopher,” the Englishman Charles Howard Hinton, was grounded in idealist philosophy and created what he considered a practical system of exercises for developing one’s “space sense” to comprehend the fourth dimension<sup>4</sup>. Although Hinton was not a mystic or occultist, his writings were embraced and developed by those who followed – from the Theosophists Leadbeater, Claude Bragdon, and Ouspensky to Steiner<sup>5</sup>. The ether had also played

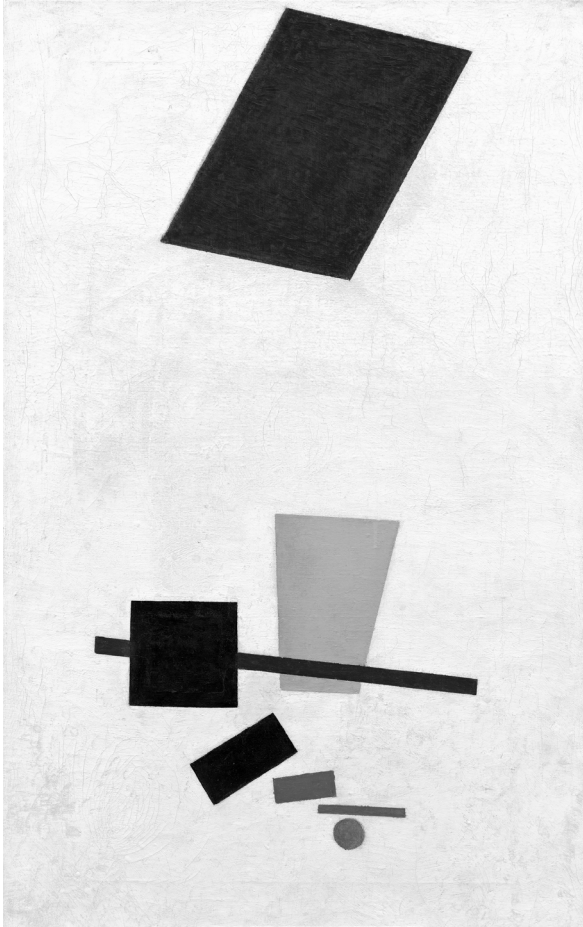
<sup>1</sup> For Boccioni and the fourth dimension, see, e.g., L.D. Henderson, “Italian Futurism and ‘The Fourth Dimension,’” *Art Journal*, 41 (Winter 1981), 317–23; and L.D. Henderson, *The Fourth Dimension and Non-Euclidean Geometry in Modern Art* (Princeton: Princeton University Press, 1983; new ed., Cambridge, MA: The MIT Press, 2013), chap. 2.

<sup>2</sup> On this subject, see Henderson, *Fourth Dimension*; for a sampling of artist’s responses (Pablo Picasso, Marcel Duchamp, Malevich), see Henderson, “The Image and Imagination of the Fourth Dimension in 20th-Century Art and Culture,” *Configurations: A Journal of Literature, Science, and Technology*, 17 (Winter 2009), 151–60.

<sup>3</sup> On the reemergence of the spatial fourth dimension in popular culture in the later twentieth century, see Henderson, “Reintroduction,” in *Fourth Dimension*, new ed. (2013).

<sup>4</sup> See Charles Howard Hinton, *A New Era of Thought* (London: Swan Sonnenschein & Co., 1888); and Hinton, *The Fourth Dimension* (London: Swan Sonnenschein & Co., 1904). Hinton’s ideas are summarized in Henderson, *Fourth Dimension*, chap. 1.

<sup>5</sup> For Leadbeater’s discussion of Hinton, see 232, n. 2. For Steiner and Hinton, see *Rudolf Steiner: The Fourth Dimension – Sacred Geometry, Alchemy, and Mathematics*, trans. Catherine E. Creeger (Great Barrington, MA: Anthroposophic Press, 2001). On Bragdon, see, e.g., Henderson, *Fourth Dimension*; and Jonathan Massey, *Crystal and Arabesque: Claude Bragdon, Ornament, and Modern Architecture* (Pittsburgh: University of Pittsburgh Press, 2009).



a central role in Hinton's philosophy, as he speculated on its relationship to the fourth dimension, and this was to be important for Ouspensky and, very likely, for Malevich<sup>1</sup>.

Ouspensky was probably introduced to Hinton and the idea of the fourth dimension by the Theosophical writings of Leadbeater, who extensively recounted Hinton's ideas and connected the Theosophical concept of "astral vision" to the fourth dimension<sup>2</sup>. As noted earlier, the ether also figured prominently in connection to the Theosophical concept of the "etherial body." While Ouspensky drew on Theosophical literature, quoting from Leadbeater and others in his 1909 book on the fourth dimension, *Chetvertoe Izmerenie*, he ultimately left Theosophy to create a new system of logic

Kazimir Malevich,  
Painterly Realism  
of a Football Player:  
Color Masses  
in the Fourth  
Dimension, 1915.  
Oil on canvas.  
The Art Institute  
of Chicago

<sup>1</sup> The discussion that follows is based, in part, on Henderson, "Abstraction, the Ether, and the Fourth Dimension"; the argument is developed further in Henderson, "Malevich, the Fourth Dimension and the Ether of Space."

<sup>2</sup> See, e.g., C.W. Leadbeater, *Clairvoyance* (Adyar: Theosophical Publishing House, 1899).

devoted solely to developing “cosmic consciousness” of the fourth dimension, the true reality<sup>1</sup>. He set forth that philosophy in his 1911 text *Tertium Organum: Kliuch k zagadkam mira* [Tertium Organum: A Key to the Enigmas of the World]<sup>2</sup>. The impact of Ouspensky on the Russian avant-garde, including Mikhail Matiushin, Alexei Kruchenykh, and Malevich, is well established. Against the larger backdrop of science and occultism, however, we can now recognize that Malevich’s response to Ouspensky occurred in a larger context.

A sampling of statements and works by members of the Russian avant-garde (along with books published in Russian translation, such as those by Le Bon, Lodge, and others), makes clear the awareness of ether physics and its focus on invisible forms and energies on the part of Malevich and his colleagues. “Our energy is the energy of Radium. . . . Our principal = the dazzling renewal of scientific discoveries,” asserted the Russian Futurist poet Vasily Kamensky in a manuscript of 1914<sup>3</sup>. Radioactivity was a particularly prominent topic in Russian popular science, because of its relevance to Mendeleev’s periodic table. Offering a seemingly endless source of energy, radioactive elements were also discussed in terms of alchemy, including by William Ramsey and Frederick Soddy, whose books were translated into Russian in 1910. When poet Benedikt Livshits later referred to avant-garde protagonist Nikolai Kulbin’s lectures of 1912 as “a salad of Bergson, Ramsey, and Picasso,” this was the Ramsay to whom he referred<sup>4</sup>.

Mikhail Larionov announced his enthusiasm for the new science the most vocally of any artist, declaring his interest in “Radioactive Rays. Ultraviolet rays. Reflectivity” in his 1913 Rayist manifesto<sup>5</sup>. Although he does not use the term ether, Larionov in his 1914 essay “Le Rayonisme Pictural” speaks of “plastic emanations” and “intangible forms” and asserts that “Rayism

<sup>1</sup> See Petr Demianovich Uspenskii, *Chetvertoe izmerenie: Opyt izsledovaniia oblasti neizmerimago* [The Fourth Dimension: An Experiment in the Examination of the Realm of the Immeasurable] (St. Petersburg: “Trud,” 1910 [1909]); for Leadbeater, see 78.

<sup>2</sup> See Petr Demianovich Uspenskii, *Tertium Organum: Kliuch k zagadkam mira* [Tertium Organum: A Key to the Enigmas of the World] (St. Petersburg: “Trud,” 1911). For the English translation, see P.D. Ouspensky, *Tertium Organum: The Third Canon of Thought, a Key to the Enigmas of the World*, trans. from 2nd Russian ed. (1916) by Claude Bragdon and Nicholas Bessaraboff (2nd American ed., rev., New York: Alfred A. Knopf, 1922). *Chetvertoe izmerenie* was never translated into English, but Ouspensky reproduced much of its content in the chapter titled “The Fourth Dimension,” in P.D. Ouspensky, *A New Model of the Universe: Principles of the Psychological Method in Its Application to Problems of Science, Religion, and Art* (London: Kegan Paula, Trench, Trubner & Co., 1931).

<sup>3</sup> Kamensky, unpublished manuscript, quoted in Anthony Parton, *Mikhail Larionov and the Russian Avant-Garde* (Princeton: Princeton University Press, 1993), 137.

<sup>4</sup> See Benedikt Livshits (1933), as quoted in Vladimir Markov, *Russian Futurism: A History* (Berkeley: University of California Press, 1968), 6.

<sup>5</sup> Mikhail Larionov, “Rayonist [Rayist] Painting,” in *Russian Art of the Avant-Garde: Theory and Criticism*, ed. John E. Bowlt, rev. ed (London: Thames and Hudson, 1988), 98.



is the painting. . . of these *infinite* products with which the whole of space is filled<sup>1</sup>”.

Malevich was likewise deeply interested in energies and invisible realities, and his writings and art reflect the new conceptions of matter and space. In his 1916 text “From Cubism to Futurism to Suprematism: The New Realism in Painting” Malevich declared, “*Objects have vanished like smoke; to attain the new artistic culture, art advances toward creation as an end in itself and toward domination over the forms of nature*”<sup>2</sup>. Rather than superficial objects or surfaces, Suprematism would focus on “inherent forms”: “Solid matter does not exist in nature. There is only energy,” the painter asserted in 1921, echoing earlier ideas like the “electric theory of matter”<sup>3</sup>. Malevich’s 1916 drawing *Composition 14t (Suprematism: Sensation of Electricity)* (Khardzhiev Collection, Amsterdam) makes his scientific interests clear.

When Malevich premiered Suprematist painting at the *0.10* exhibition in December 1915, he had announced his interest in the fourth dimension in the titles and subtitles of his paintings, such as *Movement of Painterly Masses in the Fourth Dimension* and *Color Masses in the Fourth Dimension* or *Color Masses in the Second Dimension*. As I first argued in my 1983 book *The Fourth Dimension and Non-Euclidean Geometry in Modern Art*, Malevich’s Suprematist paintings with planes of one color only, such as *Eight Red Rectangles* (1915), strongly suggest the two-dimensional sections or traces created when three-dimensional objects pass through a plane<sup>4</sup>. This phenomenon had been discussed by both Hinton and Ouspensky and illustrated in Bragdon’s 1913 *A Primer of Higher Space* and his 1912 *Man the Square*, a copy of which had reached Ouspensky in St. Petersburg via the international Theosophical network<sup>5</sup>. These “Color Masses in the Second Dimension” may have served Malevich as indirect signs of the fourth dimension by means of the analogy of a two-dimensional world, so prevalent in the literature on the fourth dimension, beginning with E.A. Abbott’s *Flatland: A Romance of Many Dimensions by a Square* of 1884.

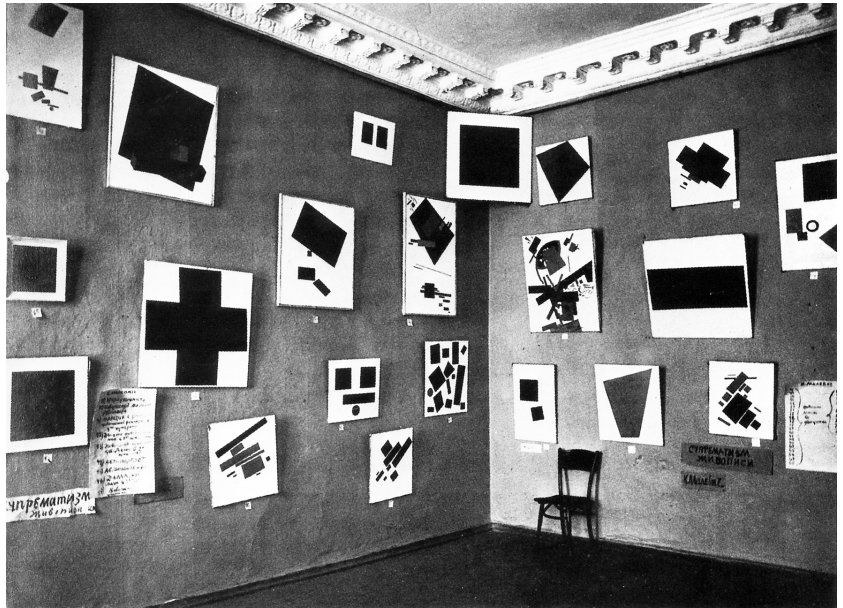
<sup>1</sup> Larionov, “Le Rayonisme Pictural,” in *ibid.*, 100

<sup>2</sup> Kazimir Malevich, “From Cubism to Futurism to Suprematism: The New Painterly Realism,” in *Russian Art of the Avant-Garde*, ed. Bowlt, 119.

<sup>3</sup> Kazimir Malevich, “Futurism-Suprematism” (1921), in *Kazimir Malevich, 1878–1938* (Washington, D.C.: National Gallery of Art, 1990), 178. For “inherent forms,” see K. Malevich, “From Cubism to Suprematism: The New Realism in Painting” (1915), in Douglas, *Swans of Other Worlds*, 109; translated in this manner in Charlotte Douglas, “Malevich and Western European Art Theory,” in *Malevich: Artist and Theoretician* (New York: Abbeville, 1991), 60.

<sup>4</sup> See Henderson, *Fourth Dimension*, chap. 5.

<sup>5</sup> Bragdon’s 1912 *Man the Square* contained the images in figure as two separate illustrations; in 1913 he combined them in Plate 30 of *A Primer of Higher Space (The Fourth Dimension)*. Both books were published by Bragdon’s Manas Press in Rochester, NY. Bragdon’s Manas published the first English translation of *Tertium Organum*, and Ouspensky noted having received *Man the Square* in St. Petersburg in his preface to that volume.



Installation view  
of “0,10. The Last  
Futurist Exhibition,”  
Petrograd, 1915

Malevich’s *Painterly Realism of a Football Player: Color Masses in/of the Fourth Dimension*, however, is more typical of his Suprematist works, which generally include multicolored overlapping planes that prevent a reading of the image as two dimensional. Here the artist evokes higher dimensions, drawing on the theme of time or motion as signs of higher dimensional existence. Hinton, for example, had illustrated the passage of a spiral through a plane to demonstrate the way in which a lower dimensional being would misinterpret that phenomenon as a dot moving in a circle. Yet that motion, as Hinton and Ouspensky realized, also stands as a sign of a phenomenon from a higher dimension.

According to Ouspensky, a “sensation of infinity” and vastness would characterize the first moments of the transition to the new “cosmic consciousness” of four-dimensionality, and Malevich referred specifically to the space of his Suprematist paintings as the “white, free chasm, infinity<sup>1</sup>”. Rejecting the blue of the earth’s sky, he creates a cosmic white expanse in which variously colored elements float freely, without any specific left-right or up-down orientation, just as Hinton had argued that gaining independence from conventional orientation and the pull of gravity would be the initial step in educating one’s “space sense” to perceive the fourth dimension<sup>2</sup>. Here Malevich seeks to convey the physiological *experience* of four-dimensional cosmic consciousness, relying on concepts long associated with the fourth

<sup>1</sup> See Ouspensky, *Tertium Organum* (1922 ed.), 258; and Malevich, “Non-Objective Creation and Suprematism” (1919), in *K.S. Malevich: Essays on Art 1915–1933*, ed. Troels Andersen, trans. Xenia Glowacki-Prus and Arnold McMillin, 2 vols. (Copenhagen: Borgen, 1971), vol. 1, 122.

<sup>2</sup> See, e.g., Hinton, *New Era of Thought*, Part I, Introd

dimension – spatial vastness and infinity, freedom from gravity and specific orientation, and implied motion. Yet Ouspensky's and Hinton's discussion of the ether may also have offered the painter an insight into how to embody the first experience of higher dimensional forms.

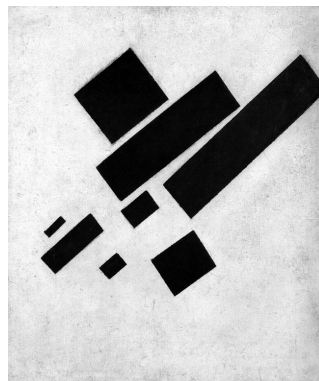
Malevich's interest in subliminal sensation and perception, including the effect of flickering, is documented in his 1912–13 painting *The Knife Grinder: Principle of Flickering* (Yale University Art Gallery). A similar kind of flicker or pulsing figured in Hinton's and Ouspensky's writings. Following Hinton, Ouspensky had argued that a two-dimensional being would perceive a multicolored three-dimensional form passing through its space as a succession of colors, possibly in motion, if the object's size changed.

For Ouspensky, our conventional spatial perception, limited as it is to three dimensions, means that, like a two-dimensional being, "we see the world as through a narrow slit," misinterpreting spatial phenomena as temporal ones<sup>1</sup>.

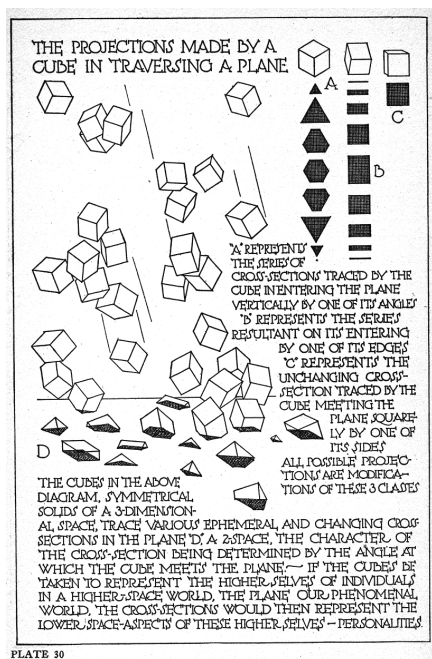
A clue to the role the ether may have played for Malevich exists in chapter 4 of *Tertium Organum*, in which Ouspensky's comments about the "slit" occur.

Hinton, in his 1888 book *A New Era of Thought*, had discussed the ether as a three-dimensional analog to a two-dimensional fluid film or surface of contact. Ouspensky reproduced that very discussion at the end of this chapter, after a highly suggestive description of what we see through our three-dimensional slit:

"Th[e] conception of the world which we deduce from our usual view of time makes the world appear like a continuously gushing out igneous fountain of fire-works, each spark of which flashes for a moment and disappears, *never* to appear any more. Flashes are going on continuously, following one after another, there are an infinite number of sparks, and everything

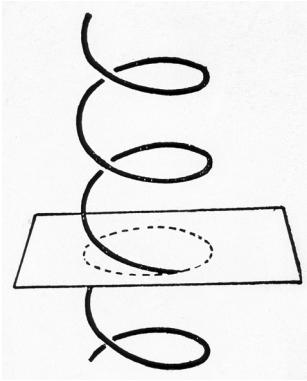


Kazimir Malevich.  
Eight Red Rectangles  
The Museum  
of Modern Art,  
New York



Claude Bragdon,  
A Primer  
of Higher Space  
(The Fourth  
Dimension)  
(Rochester, NY:  
The Manas Press,  
1913), plate 30

<sup>1</sup> Ouspensky, *Tertium Organum* (1922 ed.), 46. For Ouspensky's recounting of Hinton's discussion in *A New Era of Thought*, see Ouspensky, *A New Model of the Universe* (1934; New York: Vintage Books, 1971), 78–79; this chapter, titled "The Fourth Dimension," reproduces much of the content of his never-translated 1909 book *Chetvertoe Izmerenie*, as noted above. See also Hinton, *Fourth Dimension*, chap. 2.



Charles Howard  
Hinton, *Spiral passing  
through a plane,*  
from *The Fourth  
Dimension*, 1904

together produces the impression of a flame, *though it does not exist in reality*<sup>1</sup>.

For Ouspensky, this “fountain of fireworks” was an impermanent illusion of true, timeless four-dimensional reality. Yet, such sparks flashing – or flickering – could be viewed positively as the first signs or sections of higher dimensional forms. And the ether, as a three-dimensional “fluid film,” would be the context in which the flashes occurred, as four-dimensional forms penetrated it. According to Hinton, “[W]hen we study a higher solid, we must suppose that it passes through the aether, and that we only see that thin three-dimensional section of it which is just about to pass from one side to the other of the aether”—or, in Malevich’s case, the first planar face of a solid breaking through<sup>2</sup>. Malevich’s

“semaphores” of color, as he termed his planes, break through in just this way – like Ouspensky’s “fireworks” flickering forth before our eyes<sup>3</sup>.

In contrast to Kandinsky’s and Boccioni’s fluid approaches to the ether, which suggested continuous materialization and dematerialization, Malevich focused on clean slices or cuts of objects as they break through the ether. But he, too, would come to use chiaroscuro to suggest dissolution or “fading away” as he explored the liminal transition between existence and non-existence in drawings and paintings beginning in 1916. Examples of this technique include such drawings as *Suprematism: Two Intersecting Planes, Fading* of 1917 or *Suprematism: Interacting Elements, Fading* of 1917–18 (both, Khardzhiev Collection, Amsterdam) and paintings such as *Yellow Plane in Dissolution* of 1917–18 (The Museum of Modern Art, New York). Recovering the prevalence of the ether also provides an important new context for these works.

As Charlotte Douglas observed in her 1991 essay, “Malevich and Western European Art Theory,” “Abstract styles were the attempt to see deeply into the structure of the world, to bring together former dichotomies – matter and spirit, material and energy<sup>4</sup>.” We have missed for far too long the scientific ideas that were the backdrop for artists grappling with these issues, in particular, the ubiquitous ether of space. With the ether restored as the transitional term in this process, along with the willingness of scholars to recognize that the utopian vision shared by all of the artists was nourished by occult sources, we are far closer to understanding “what it is possible to imagine” in this period.

<sup>1</sup> Ouspensky, *Tertium Organum*, 40–41.

<sup>2</sup> Hinton, *New Era of Thought*, 59.

<sup>3</sup> For “semaphores,” see Malevich, “Non-Objective Creation and Suprematism,” in *Malevich: Essays on Art*, ed. Andersen, vol. I, 122.

<sup>4</sup> Douglas, “Malevich and Western European Art Theory,” in *Malevich: Artist and Theoretician*, 60.