

Analyzing the Crisis of Hilma af Klint: The Digital and Analog Analysis of Spirituality,

Abstraction, and Art

by

Emily Virginia Leon

Department of Art, Art History & Visual Studies
Duke University

Date:_____

Approved:

Paul Jaskot, Supervisor

Victoria Szabo

David Morgan

Thesis submitted in partial fulfillment of
the requirements for the degree of Master of Arts in the Department of
Art, Art History & Visual Studies in the Graduate School
of Duke University

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ABSTRACT

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Abstract

Hilma af Klint, an oft-cited but underresearched Swedish artist, is often included in art historical literature on art and spirituality. And yet, the assumed art world affinity between Swedish artist Hilma af Klint and other leading voices on the topic – above all, the Austrian philosopher and esotericist Rudolf Steiner and Russian artist Wassily Kandinsky – demonstrates an urgency to place af Klint within a framework she doesn't quite belong. This has subsequently led to a misunderstanding of her complexity as an artist and the broader question of spirituality and art. A lack of thorough visual analysis of her early works in much of the secondary scholarship, in addition to the absence of archival research, allows for these speculative claims. However, attending to a closer analysis of her visual imagery as well as available archival information questions the supposed affiliation of af Klint in particular to the assumed work of Steiner. The accepted narrative of af Klint's relationship to Steiner claims he negatively impacted her works between the years 1908 and 1912. I employ analog, digital, and historical methods to explore this interesting albeit problematic encounter between af Klint and Steiner. These methods afford the opportunity to consider these connections in new and different ways. Analog, digital, and historical methods establish that the Steiner narrative in much of the secondary literature can only be understood as speculative. In addition, digital methods afford an opportunity to analyze this particular moment anew

with the assistance of interactive data visualization software and text analytics systems. These systems not only indicate that there was no shift in her iconography before 1908 and after 1912, but also demonstrate the importance of re-evaluating this particular moment in af Klint's life.

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1. Introduction

Swedish artist Hilma af Klint (1862-1944) lived both near to and at a distance from the material world. In the early stages of her artistic development she produced portraits, landscapes, and botanical works. Although these works of precise naturalism executed in watercolor, ink on paper, and oil paint represent concrete forms, it is subtly clear in her early works that she also already expressed an interest in the evolution of the physical world. The medium itself suggests a weightlessness, an extremely delicate aesthetic both of and too perfect for this world. When she began producing automatic drawings with her séance group De Fem (The Five), her work became truly transcendent. She communed with the spirits and developed graphite automatic drawings of mimetic abstraction – drawings that inarguably were grounded in her physical and psychical visual experiences. The states she represented convey an acute awareness and dependence on the relationship between phenomenology and naturalism. In other words, the religious and esoteric practices af Klint explored, in addition to her artistic styles suggest an interest in how everything in the universe affects and resonates with everything else, the inherent relationship between the material and immaterial.¹ Af Klint's mature paintings, often described as *abstract*, later in

¹ Af Klint's investigation of these realms was developed through myriad systems and symbols that speak to her experience(s) in the world. Symbolism is an old form of visual expressions that communicates thoughts

life, in a sense, juxtapose physical and metaphysical worlds – she favored a partial representation that abstracts from imitative forms and translates into another similar form detached from the physical world.

When art historians have addressed af Klint's work they have done so within the context of a broader analysis of spirituality in modern abstract painting, often singularly focused on the topics of gender and style. Certainly, feminist and formal analysis have been effective methods for exploring spirituality in art and its complexity. In the case of af Klint, however, to focus on the issue of her gender and abstraction alone is to avoid a closer examination of not just her particular approach to spirituality but also the depth of her artistic practice. In terms of form, scholars and curators alike most often discuss her spiritual works in relation to Russian painter Wassily Kandinsky (1866-1944). In the canon, Kandinsky has assumed the position of both the father of abstract painting and

and emotions about the world. Like af Klint, others in history such as Italian cosmological theorist Giordano Bruno have charted an understanding of the universe through a series of archetypal images, signs, and ideas. For Bruno, the function of images and signs demonstrates that the act of seeing and receiving of images is of great importance, if not more important, than the language of philosophy. Bruno was interested in the duality of nature and the divine. He argues that we understand "by composition, combination, plurality of terms, by means of discourse and reflection" and not by any "simplicity." This is an incredibly modern statement that proceeds well-known twentieth century philosophers such as Ernst Cassirer and Susanne Langer, who both argued the importance of the art symbol. They believed that the prime symbol of art could only be understood independently from discourse. Giordano Bruno, *On the Composition of Images, Signs & Ideas* (New York: Willis, Locker & Owens, 1991), 29. For further reading on art and symbol see Ernst Cassirer, *The Philosophy of Symbolic Forms* (New Haven: Yale University Press, 1996); Susanne K. Langer, *Philosophy in a New Key: A Study in the Symbolism of Reason, Rite, and Art* (Cambridge: Harvard University Press, 1980); and Langer, *Feeling and Form: A Theory of Art developed from Philosophy in a New Key* (New York: Charles Scribner's Sons, 1953).

the progenitor of the spiritual in modern art, making a seemingly natural reference point for other artists like af Klint. In relation to gender, though, the literature highlights af Klint as an innovative female modern artist who produced nonobjective paintings several years *before* Kandinsky. These attempts to characterize her as either a minor artist in Kandinsky's orbit or a radical innovator contrast with the focus on her experiments with spirituality and aesthetics. In this context, she is praised but derided as well as a spiritualist artist often without full consideration of other aspects of her work, such as her automatic drawings produced with her séance group De Fem, or her scientific, naturalistic, and botanical works.² In extreme cases of scholarship, she is omitted altogether as a pioneer of abstraction based on her absence from avant-garde social networks.

These claims bear some truth. Nonetheless, these narratives of af Klint's oeuvre reveal that she is still misrepresented as an artist who worked on her own terms in a variety of artistic styles outside of the traditional social networks accepted in art history. Af Klint weaved in and out of multiple realms of consciousness, most notably her self-ordained mediumship that allowed her to communicate with the spirits of the dead and

² More recently, scholars have also addressed af Klint's botanical works. However, these works do not receive as much attention as her spiritual works. Julia Voss explicitly addresses af Klint's interest in science in her essay "Hilma af Klint and the Evolution of Art," in *Hilma af Klint: Painting the Unseen* (London: Koenig Books, 2016), 24-28.

produce automatic drawings and writings with her séance group. Her works of both technical precision and some of pure abstraction signify some overlap of the most important facets of her visual vocabulary such as her attention to flora.³ In addition, her employment as a professional draughtsman and involvement in spiritualism promote her dependence on both material and spiritual worlds.⁴ Nonetheless, her works and life are often discussed selectively and reductively, which eclipses our understanding of her and the art's significance.

Af Klint maintained a fundamental dualism between her public and private life. Given this, as well as other complexities of her biography, scholars have had a difficult time categorizing her. In the following, I examine and analyze af Klint's early works available through the Hilma af Klint Foundation to stress the importance of archival research that is relatively absent in the scholarship, and to re-evaluate af Klint's artistic career and assumed scholarly claims about the nature of her spirituality. Most

³ I am only referencing the style of some of De Fem's automatic drawings from the particular years analyzed for this study and am not considering her large-scale paintings to be works of pure abstraction.

⁴ Some major exhibitions since the 1990s have aimed to address the important role spirituality and the occult played in shaping the modern imagination, such as Veit Loers ed., *Okkultismus und Avantgarde: Von Munch bis Modrian, 1900-1915* (Frankfurt: Schirn Kunsthalle, 1995); Christoph Wagner ed., *Das Bauhaus und die Esoterik: Johannes Itten, Paul Klee, Wassily Kandinsky* (Hamm: Gustav-Lübcke-Museum, 2005); Angela Lampe and Jean de Loisy eds., *Traces du sacré* (Paris: Centre Pimpidou, 2008); Joëlle Pijaudier-Cabot and Serge Faucherau eds., *L'Europe des esprits ou la fascination de l'occulte, 1750-1950* (Strasbourg: Musée d'art moderne et contemporain, 2011); and Jean-David Jumeau-Lafond and Kenneth E. Silver, *Mystical Symbolism: the Salon de la Rose + Croix in Paris, 1892-1897* (New York: Guggenheim Museum Publications, 2017) curated by Vivien Greene.

prominent in this regard are assumptions about the Austrian philosopher and esotericist Rudolf Steiner (1861-1925) and his meeting with the artist in 1908. The conjecture around af Klint's relationship to Steiner focuses on an oft-repeated claim that he negatively impacted and influenced her works between the years 1908-1912. The art world propensity to develop links between af Klint and Steiner as well as af Klint and Kandinsky demonstrates an urgency to place her within an already established framework. The question is whether reducing her to the network of these two figures is really right for her work and life or whether such a move perpetuates a misunderstanding of her as an artist.

The literature often states that Steiner visited af Klint's studio in 1908 and critiqued the paintings she had developed with the assistance of spirits or high masters.⁵ Based on this encounter, scholarship most often claims that Steiner's skepticism around mediumistic painting influenced af Klint to cease production through 1912. On the other hand, the literature sometimes states af Klint stopped painting for four years because her mother became quite ill. This discrepancy is the key to what the methods employed throughout this study seek to investigate. In the following work, I utilize mixed art

⁵ Anna Maria Bernitz, "Hilma af Klint and the New Art of Seeing," in *A Cultural History of the Avant-Garde in the Nordic Countries 1900-1925* (Leiden: Brill, 2013), 593. Bernitz mentions the af Klint-Steiner encounter. She states, "Maybe she [af Klint] had hoped that he would vindicate her, but instead he criticized spirit (mediumistic) painting," 593.

historical and digital humanities methods to explore this interesting albeit problematic encounter between af Klint and Steiner to demonstrate that the art historical propensity to connect Steiner or Kandinsky to af Klint force her into a traditional narrative of abstraction as a way to validate her place in the canon. This comparative method between her and these two men inevitably position her within a long-established understanding of European modernism, a convention af Klint was largely not a part of.⁶

Most often, scholarship on af Klint groups abstraction and spirituality with the historical avant-garde and modernity, which inherently includes Kandinsky and his interest in spirituality and abstraction.⁷ This art world affinity introduces important questions to consider regarding af Klint's art and biography: Is spirituality synonymous with abstraction in European art on the eve of World War I? Why has there been a lack of close archival research in the secondary scholarship on af Klint and can, for example, a closer look at her early sketchbooks help us understand the biographical inconsistency between her and Steiner? Why has there been a lack of interest in af Klint's early sketches with her séance group De Fem? Do these sketches not contribute to our total

⁶ Recent scholarship that presents a fuller picture of af Klint's life can be read in the exhibition catalogue for *Hilma af Klint: Painting for the Future*. Tracey Bashkoff, ed., *Hilma af Klint: Paintings for the Future*, exh. cat. (New York: Guggenheim Museum Publications, 2018).

⁷ "Who Painted the First Abstract Painting?: Wassily Kandinsky? Hilma af Klint? Or Another Contender?" *Open Culture*, last modified September 14, 2017, <http://www.openculture.com/2017/09/who-painted-the-first-abstract-painting-wassily-kandinsky-hilma-af-klint-or-another-contender.html>. This article continues the debate around whether or not af Klint or Kandinsky painted the first *abstract* works.

understanding of af Klint's visual vocabulary and its evolution over the course of her life? Can visual analysis of her early works tell us something about the works produced before and after the alleged Steiner encounter? Was there a significant change in af Klint's visual vocabulary before and after the years 1908 and 1912? Do canon formation, categorical boundaries, and the predicament of the terms abstract and spiritual and their constraints and misinterpretations contribute to this crisis?

A mixed approach of historical, analog and digital methods allows new ways of exploring these questions about af Klint in the context of spirituality and art history. In our data driven culture, it is possible to organize art historical information and analyze it through interactive data visualization software and text analytics systems. Such methods afford new ways to approach the diversity of sources involved in an art historical analysis. For my digital interests, I examine the visual information in af Klint's sketchbooks and diaries as a way of developing a typology of relevant controlled vocabularies, images, and symbols that can be employed through iterative visualizations for an analysis of patterns in her work thus providing a prototype that begins to grip the scale of archival materials available. The Hilma af Klint Foundation, a non-profit organization established in 1972, has digitized af Klint's notebooks and sketchbooks for academic research purposes. Through the Foundation, I was able to choose from 124 notebooks and sketchbooks of around 26,000 hand written and typed pages. Working

with af Klint's archival materials allows for the opportunity to complete a visual analysis of sketches before and after the alleged Steiner encounter.

A typology of styles and symbols was developed based on an analysis of each drawing in my sample. Each image was then added to Timeline 3D, a desktop multimedia timeline, that positions the drawings according to their year of origin. In addition to the thumbnail images, the details of year, date, and historical information are displayed. Tagged terms that represent prominent topics in the drawings and based on the typology developed from the visual analysis of images are also included in the timeline. I have worked with these sources and developed these visualization strategies in order to determine whether there was a shift in her iconography before 1908 and after 1912. More broadly, organizing art historical information in this way changes how we think about the relationship between Steiner and af Klint in this particular moment. For instance, digital repositories like Timeline 3D allow art historians and research practitioners to engage with image analysis in efficient ways in order to study iconography across time.⁸ This method is significant in this study insofar as it questions

⁸ One example of a digital project that visualizes the interrelationship between an artwork and its changing historical context is *Mapping Titian*: <http://www.mappingtitian.org/about>. The site allows users to search a provenance index of paintings produced by Venetian Renaissance artist Titian. Users can create collections of paintings and maps as a means of analyzing and viewing particular works over time and space.

whether Steiner was as influential on af Klint's work during this particular moment as the literature suggests.

My working process to develop the visual typology led me to Graph Commons, a platform for making and analyzing network graphs of social and intellectual networks. On the one hand, the digital is used to structure information and grapple with the scale of archival materials. On the other hand, it is a launching point to experiment and think about af Klint and her works in new ways. Thus, the typology I developed based on visual analysis helped determine relational patterns in core vocabularies and concepts based on how often the terms revealed themselves in a corpus of texts af Klint is known to have read, possessed in her personal library, or would have likely been familiar with at the time. Corpus work on textual sources can help us understand better what art history and af Klint say about art, spirituality, and the influence of specific figures such as Steiner based on the ability to simply and quickly trace specific terms in multiple contexts. Does corpus linguistics help us with our visual analysis of af Klint's iconographic trajectory? Laurence Anthony's AntConc, a freeware corpus analysis toolkit for concordance and text analysis functions as an efficient way to test this question through its ability to quickly count words in a text affording meaningful albeit experimental connections between primary texts and key terms in the Graph Commons network.

The known story of the artist reveals why an expanded digital approach for image and text may be helpful. Af Klint experimented with multiple artistic styles throughout her lifetime: academic painting and drawing, automatic drawing and writing, and new forms of visual expression beginning around 1906, the moment often considered in art history as the year she began producing nonobjective or abstract works. Her visual work is significantly varied and her knowledge of spirituality was extensive. The critical context, however, confines af Klint to the shadow of Kandinsky and Steiner, which in turn eclipses af Klint's works to function as the profoundly independent works of art that they are. Why the urgency of comparison with these two men? Are her works unable to perform outside of such a classification?

This new exploratory process suggests different ways of approaching af Klint through careful engagement with archival materials and mixed methods that provide meaningful results regarding her connection to Steiner in 1908. These methods demonstrate that af Klint's iconography was consistent, and that she presented it within different artistic styles. More importantly, her iconography was consistent before and after the alleged Steiner encounter. The exploration and careful examination of this moment suggests a re-evaluation of af Klint's total body of work, in addition to how we address her role in the history of modern art. Her ability to employ multiple artistic styles demonstrates psychological, intellectual, and stylistic growth. Each of these are

important points that contribute to how her work evolved across time. A closer examination and visual analysis of archival materials can provide us with a better understanding of her life and work rather than accepting the disjunctive moments and styles of her artistic oeuvre propagated in art historical literature on the topic.

1.1 Abstraction, Spirituality, and Modern Art

Our understanding of the development of modern art in general and abstraction in particular is largely dependent on the institutional framework that shaped its image. Around 1929, for example, the Museum of Modern Art in New York became “committed to the idea that abstraction was an inherent and crucial part of the development of modern art.”⁹ The dedication to outline the importance of abstraction and modern art at this particular moment was, most famously, introduced in the form of a diagram by Alfred H. Barr, Jr. for the exhibition *Cubism and Abstract Art* (1936).¹⁰ An art historian and director at the MoMA, Barr’s genealogical chart was based on his definition of modern artistic techniques of the day and charted the origins and influences of modern art. His chart concentrated on style rather than artists’ personal biographies, and hence omitted religious or spiritual contexts. This critical moment, for a

⁹ Glenn D. Lowry, “Abstraction in 1936: Barr’s Diagrams,” in *Inventing Abstraction 1910-1925: How a Radical Idea Changed Modern Art*, exh. cat. (New York: The Museum of Modern Art, 2012), 359.

¹⁰ Alfred Barr, Jr., *Cubism and Modern Art: Painting, Sculpture, Constructions, Photography, Architecture, Industrial Art, Theatre, Films, Posters, Typography*, exh. cat. (New York: The Museum of Modern Art, 1936).

time, came to define an understanding of abstraction and the key figures such as Kandinsky that we continue to elevate to this day.¹¹

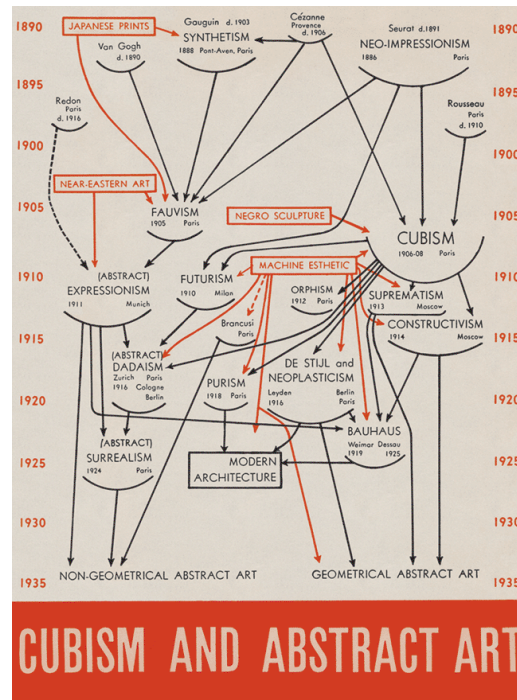


Figure 1: Alfred H. Barr Jr.'s classic "Cubism and Abstract Art" diagram.¹²

The rise and interest in social art history and other methodological approaches as well as an emphasis on iconographic analysis began to challenge Barr's method around

¹¹ Kandinsky's status as an abstract pioneer was first promoted in the U.S. in particular in 1936 by Alfred H. Barr, Jr. See Barr, *Cubism and Modern Art*. Griselda Pollock addresses the problems around Barr's chart and the masculine myths of modernism in *Vision & Difference: Femininity, Feminism and the Histories of Art* (New York: Routledge, 1988), 50-90.

¹² The network diagram for Leah Dickerson's 2013 MoMA exhibition *Inventing Abstraction: 1910-1925* re-examines the early history of abstraction and thus, in a sense, replaces Barr's genealogical chart. See network here: <https://www.moma.org/interactives/exhibitions/2012/inventingabstraction/?page=connections>.

the 1940s and 1950s.¹³ The methodology of social history in particular is important insofar as it devotes less attention to formal elements and considers social and political factors of artists' behavior through the study of origin, organizations, and institutions.¹⁴ Nonetheless, these early methods often isolated and excluded artists not connected to more cosmopolitan cities and artistic networks, thus neglecting artists lacking a connection to the predominately male artists we recognize in the history of abstract painting. In addition, these methods still ignored the complexity of spiritual thought as a major point of Kandinsky and others art.¹⁵

The study of spirituality in modern art emerged slowly in art historical scholarship, not least because modernity is often bound by rationalist and mechanical thought. Sensory experience and religious thinking were dominated by intellectual and deductive reasoning that influenced the nineteenth century revolt on philosophical materialism, naturalism, organized religion, and questions of faith in God that evolved into the spiritual and critical syncretism of the twentieth century.¹⁶ Therefore, the

¹³ These approaches to art history introduced by critical art historians such as Erwin Panofsky, E.H. Gombrich, and Meyer Schapiro, among others, promoted and accounted for the role society played in the development of art providing explanations to questions pertaining to artists' careers and his or her works of art.

¹⁴ Arnold Hauser, *The Social History of Art* (New York: Routledge, 1999).

¹⁵ For more detailed information on art history and its methods see e.g. Eric Fernie, *Art History and Its Methods: A Critical Anthology* (New York: Phaidon Press Limited, 1995), 10-21.

¹⁶ J.W. Burrow, "The Stuff of the World and the Promises of Science," in *The Crisis of Reason: European Thought, 1848-1914* (New Haven: Yale University Press, 2000), 31-67. Burrow's intellectual history discusses the popularization of the physical sciences and the dominant role of science in society, materialist

spiritual dimension was simply removed from serious discussion based on the 1950s model that framed modern art through the lens of formalism. Some scholars, however, in the 1960s began to challenge the exclusive model and devoted their attention to the spiritual interests of the avant-garde.

In 1966, Finnish historian Sixten Ringbom published a revisionist interpretation of modern abstract painting in his essay “Art in ‘The Epoch of the Great Spiritual’: Occult Elements in the Early Theory of Abstract Painting.”¹⁷ Ringbom’s essay focuses on the intellectual history of the spiritual dimension in modern abstract painting. His method was foundational insofar as it set the stage for further scholarship and took seriously the role spirituality played in the development of modern abstract painting. He sought to prove the influence of the spiritual dimension in abstract painting by revisiting in particular the works of Kandinsky.¹⁸ Ringbom extended his argument in *The*

reductionism, and the reaction against materialism. His chapter concludes with an examination of epistemological phenomenalism and examples of practical scientific theories. He cites scientists Ernst Mach and philosophers William James and Hans Vaihinger as some of the key figures who sought to understand the relationship between science and faith in God.

¹⁷ 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 Institutes* 29, (1966): 383-418.

¹⁸ Ringbom understood Kandinsky’s spiritual revelations in several ways. He believed that Kandinsky’s theories evolved from the tradition of Goethe, Delacroix, and neo-impressionists. He also believed that Theosophy was an influence on a more general level. Finally, art was a path to higher knowledge. This higher knowledge was often obtained from inner and personal revelations.

Sounding Cosmos: A Study in the Spiritualism of Kandinsky and the Genesis of Abstract Painting (1970).¹⁹

Ringbom's revisionist essays made it a point to focus on Theosophy and esotericism as essential to understanding Kandinsky's abstract paintings. He argued that the occult was anything but marginal in modern times, making it a point to discuss influential characters and seminal texts on abstract painting.²⁰ Still, although very different in perspective, both Barr and Ringbom placed Kandinsky at the center of debate. For instance, Ringbom structures his essay beginning with a brief history of Kandinsky, the authors who wrote about Kandinsky in the early-twentieth century, Kandinsky's development of *Der Blaue Reiter*, and German philosophy of the day known to have been an influence on Kandinsky's theory of abstraction. As a result, Kandinsky's elevated status and pioneering role has influenced decades of art historical understandings of abstraction and spirituality in modern art. Except for Kandinsky, by the end of the 1960s, spirituality and the inner lives of the modern artists were largely written out of conventional art history.

¹⁹ Sixten Ringbom, *The Sounding Cosmos: A Study in the Spiritualism of Kandinsky and the Genesis of Abstract Painting* (Åbo, Finland: Abo Akademi, 1970).

²⁰ Ringbom was particularly interested in the influence of figures such as Rudolf Steiner, H.P. Blavatsky, and Annie Besant and Charles Leadbeater's book *Thought-Forms: A Record of Clairvoyant Investigation* originally published in 1901 in London.

By 1986 an entirely new approach to the avant-garde and the influences shaping them and their artwork emerged: the spiritual perspective.²¹ This perspective challenged earlier approaches to modernism such as the formalist development and instead paid particular attention to new content: spiritual, utopian, and metaphysical. Through such new themes, the occult and spirituality slowly began to gain acceptance as anything but marginal.

In particular, this broader approach to the spiritual dynamic in art was introduced to an international audience through American curator Maurice Tuchman in the exhibition *The Spiritual in Art: Abstract Painting 1890-1985* (1986).²² Tuchman's show not only sought to expose the public to a lesser known spiritual side of modern art, but also directly challenged the picture of modern art promoted by the MoMA insofar as chronology, genius, or who came first were not in question. Prominent scholars in the field expanded on the importance of the spiritual dimension of modern artists in a

²¹ At this moment in history, spirituality in modern abstract painting was largely defined by the studies of Sixten Ringbom and Robert P. Welsh who were writing about Kandinsky and Piet Mondrian's involvement with Theosophy. They sought to promote spirituality and its inherent role in the development of spiritual realities through inner experiences. These inner experiences were illustrated in the Theosophical doctrine and Kandinsky's 1911 treatise. Wassily Kandinsky, *Concerning the Spiritual in Art*, trans. M.T.H. Sadler (New York: Dover Publications, Inc., 1977); Robert P. Welsh, *Piet Mondrian 1872-1944*, exh. cat. (Toronto: Art Gallery of Toronto, 1966); and idem, "Mondrian and Theosophy," in *Piet Mondrian 1872-1944: A Centennial Exhibition*, exh. cat. (New York: Solomon R. Guggenheim Museum, 1971), 33-52.

²² Maurice Tuchman, *The Spiritual in Art: Abstract Painting 1890-1985*, exh. cat. (New York: Abbeville Press, 1986).

lengthy exhibition catalogue with nineteen essays promoting the importance of the artist's intuitive and esoteric interests.

Tuchman's exhibition wanted to demonstrate that the spiritual dimension in modern abstract painting was "inextricably tied to spiritual ideas current in Europe in the late nineteenth and early twentieth centuries."²³ Building up to this groundbreaking moment, the scholarship available on the spiritual dimension in modern abstract painting consisted of studies by pioneering art historians such as Ringbom, Robert P. Welsh, and Robert Rosenblum, among others who had taken serious interest in artists ranging from Kandinsky to Mark Rothko. Based on the scholarship available at the time, this significant exhibition confirmed the older view that placed Kandinsky in the center of the spiritual in art debate and subsequently took its name from Kandinsky's treatise *Concerning the Spiritual in Art* (1911).²⁴ However, despite the dominance of known male artists, this exhibition also included artwork of the lesser known female artist Hilma af Klint, among others.²⁵

²³ Ibid., 17.

²⁴ Wassily Kandinsky, *Concerning the Spiritual in Art*, trans. with an introduction by M.T.H. Sadler (New York: Dover Publications, Inc., 1977).

²⁵ The 1986 exhibition draws on late-nineteenth and early-twentieth century spiritual ideas. The French exhibition *Traces du sacré* (2008) picks up where *The Spiritual in Art* exhibition left off. Af Klint is the dominate female artist in both exhibitions. This contradicts the literature that often assumes the hierarchical position of the male avant-garde.

Many scholars claim that this exhibition introduced af Klint's works to an international audience for the first time. This statement has been repeated throughout the secondary literature on the topic.²⁶ The claim was incorrect. A more accurate claim would have been that *The Spiritual in Art* exhibition brought af Klint's spiritual works to the attention of an international audience for the first time.²⁷

Overlooked was the fact that her academic work, another facet of af Klint's production of art, had been shown to an international audience for the first time long before in *The Baltic Art Exhibition* of 1914 in Malmö, Sweden.²⁸ This exhibition complicates the accepted narrative about af Klint's lack of connection to avant-garde social networks. On the contrary, the event is considered "one of the greatest exhibitions in the North" and was attended by at least 850,000 people.²⁹ One of those people was Kandinsky who was also showing work at the exhibition.

²⁶ See, for example, Konrad Oberhuber, "Artistic Form and Spiritual Experience: Some Observations," in *Depression and the Spiritual in Modern Art: Homage to Miró* (New York: John Wiley & Sons Ltd., 1996), 90.

²⁷ Hilma af Klint exhibited her *abstract* works indirectly by means of using her "Blue Books" painted in 1917 and then finally at the Anthroposophical exhibition in London in 1928.

²⁸ It should be noted that af Klint also exhibited her conventional works in Norrköping in 1906, Lund in 1907, and with the Association of Swedish Female Artists in 1911, in addition to *The Baltic Art Exhibition* of 1914.

²⁹ "The Hall of Fine Art at the Baltic Exhibition," in *Baltic Reflections: The Collection of Malmö Konstmuseum, The Era of the Baltic Exhibition 1914* (Italy: Printer Trento S.r.l, 2014), 16.

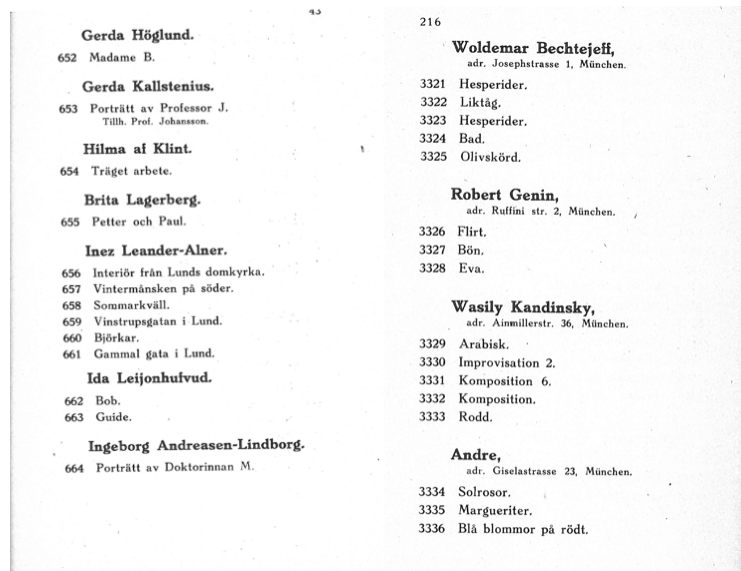


Figure 2: *Baltic Art Exhibition* (1914) catalogue register featuring the work of both Hilma af Klint and Kandinsky. Courtesy of Malmö Stad archive in Sweden.

1.2 Recent Scholarship

More recently, the social, spiritual, and theoretical have been brought together in new syntheses in regards to af Klint. These syntheses blend the best insights from these approaches but often focus on one facet of af Klint's work rather than her overall complexity and development as an artist. Over the past 15 years, there has been a resurgence of interest from scholars on the spiritual dynamic of modern art, in addition to the importance of social histories and institutional frameworks regarding af Klint. For instance, Charlene Spretnak's survey *The Spiritual Dynamic in Modern Art* (2015) was the first of its kind to document major art movements that included the complex spiritual

lives of artists.³⁰ She used historical resources and conducted personal interviews with living artists during her research process for the book in which a brief section on af Klint is included.

Scholar Julia Voss has approached af Klint's works from a perspective outside of the abstraction debate. In her essay "Hilma af Klint and the Evolution of Art" featured in *Hilma af Klint: Painting the Unseen* (2016), Voss addresses the evolution from af Klint's academic works to her "partly abstract" works produced beginning in 1906.³¹ Voss cites nineteenth and twentieth century naturalists and philosophers and aims to acknowledge the influence that biology and science had on af Klint's artistic practice. The influence of science is just as important as the role spirituality played in the development of af Klint's works.

Art historian Tessel Bauduin is one prominent scholar addressing themes ranging from the avant-garde's interest in occultism to af Klint and Spiritualism. Recently, Bauduin uploaded a provocative paper online titled "Seeing and Depicting the Invisible" (2017). She rightfully critiques the 'first abstract works' debate early on in her essay, and extends her tone of skepticism in her footnotes where she notes that

³⁰ Charlene Spretnak, *The Spiritual Dynamic in Modern Art* (New York: Palgrave MacMillian, 2014).

³¹ Voss, "Hilma af Klint and the Evolution of Art," 21.

exhibition reviewers love to point out this “fact.”³² Bauduin is interested in understanding af Klint and her oeuvre through the lens of mediumistic guidance and Spiritualism and thus challenges af Klint’s *abstract* works – claiming them as mimetic based on the influence of the spirits she was in contact with. This is an important point as af Klint is often recognized for her interest in Theosophy and not Spiritualism. Bauduin’s argument challenges the debate around af Klint and abstraction. Without a consideration of af Klint’s total body of work, however, we still do not have a clear picture of af Klint. Her spiritual work whether mimetic or abstract is only one visual modality in her total oeuvre.

Finally, art historian Annika Öhrner’s social and institutional history “A Northern Avant-Garde: Spaces and Cultural Transfer” in *A Companion to Modern Art* (2018) is by far the most comprehensive account of af Klint in recent years.³³ Öhrner argues the important role Scandinavian artists played in the Parisian avant-garde, she acknowledges the unfortunate commonplace of gendered art histories regarding af Klint and the avant-garde, she addresses the importance of af Klint’s naturalistic works, and

³² Tessel M. Bauduin, „Að sjá og sýna hið ósýnilega. Um nútímalist og andleg verk Hilmu af Klint” translated by Eva Dagbjört Óladóttir (University of Amsterdam, 2017), 3. This material was made freely available online for scholarly purposes only. Bauduin prefers the Icelandic published version when citing her essay.

³³ Annika Öhrner, “A Northern Avant-Garde: Spaces and Cultural Transfer,” in *A Companion to Modern Art* (New Jersey: Wiley-Blackwell, 2018).

she notes af Klint's inclusion in the *Baltic Art Exhibition*, among many other important moments in af Klint's historical timeline.³⁴ Öhrner believes that af Klint's "immense body of work is...a unique contribution to modernism's cultural history and art."³⁵ She asserts further that we "need to extend our historical understanding of her work and take into account the different spaces within which the artist positioned herself."³⁶ It is imperative to address and analyze the problematics around af Klint's historical timeline in order to understand her artistic development. As such, art historical and digital humanities methods work in tandem to study visual art with traditional methods of inquiry, in addition to digital affordances such as structuring information, addressing the scale of archival materials, and experimental features that might help us to better understand and interpret af Klint and her works.

³⁴ Öhrner also mentions the af Klint-Steiner connection in her essay stating that af Klint "personally in vain" looked for "acceptance of her work by Rudolph Steiner," 368. There is no citation for this statement.

³⁵ Öhrner, "A Northern Avant-Garde: Spaces and Cultural Transfer," 367.

³⁶ Ibid., 369.

2. Hilma af Klint

Af Klint was born at Karlberg Palace (Karlbergs slott), Stockholm, Sweden to Swedish naval commander Captain Victor af Klint and Mathilda af Klint on October 26, 1862. A few years after her birth, the family moved to Norrtullsgatan and finally Bastugatan, known today as Sveavägen in Stockholm. At the age of 10, af Klint attended the General School for Girls on Riddargatan in Stockholm. In 1880, she attended The Technical School recognized today as the University College of Arts, Crafts and Design or Konstfack in Stockholm where she began to study portrait painting. Between the years 1882-1887, she attended the Royal Academy of Fine Arts, graduated with honors, and was awarded a studio in the Atelier Building. During her time at the studio, af Klint worked professionally as a portraitist and landscape painter. She was also, briefly, the secretary of the Association of Swedish Women Artists.

Öhrner discusses the importance of not only *The Baltic Art Exhibition*, but af Klint's studio building in particular to the artist's development. She states that af Klint's studio was "situated in a building at Hamngatan 5, Kungsträdgården, in the heart of Stockholm and less than a kilometer from the modernist galleries at Strandvägen, a house where exhibitions of Konstföreningen ("The Art Association")" were held.³⁷

³⁷ Ibid., 368.

Öhrner's interest in emphasizing af Klint's studio and the significance of Stockholm's art scene demonstrates that af Klint was producing work in an area that was populated by artists, gallerists, and collectors. This is an important point that seeks to link Nordic countries with the commonly accepted social networks of Paris and Germany. More importantly, she highlights the under recognized role of Stockholm in the international art scene during the turn of the century.³⁸

Af Klint joined the Spiritist movement in 1879 at the age of seventeen. She also became a member of the Spiritist Literature Association. The Spiritist movement helped af Klint to have contact with and assist the soul of her sister Hermina who died in 1880. However, af Klint left the Spiritist movement in 1882 and by 1889 joined the Theosophical Society. In the Society, she continued to seriously engage with the spirit world and studied other tenets of Western esotericism. In any case, spirituality, while important, is only one common thread in af Klint's works. Af Klint's spiritual interests are briefly discussed in art historian Åke Fant's essay "The Case of the Artist Hilma af Klint" (1986) featured in *The Spiritual in Art* exhibition catalogue.³⁹ In his project of

³⁸ Norwegian painter Edvard Munch had a studio in this space as well. The Art Institute of Chicago's important show *Becoming Edvard Munch: Influence, Anxiety, and Myth* sought to debunk some of the myths surrounding his influences such as the assertion that French and German contemporaries were more influential than Scandinavian influences. Jay A. Clarke, *Becoming Edvard Munch: Influence, Anxiety, and Myth*, exh. cat. (New Haven: Yale University Press, 2009).

³⁹ Åke Fant, "The Case of the Artist Hilma af Klint," in *The Spiritual in Art: Abstract Painting 1890-1985* (Los Angeles County Museum of Art, 1986), 155-163.

recovery, Fant details the spiritual interests of af Klint and notes her connection to Steiner. In his footnotes, he includes several esoteric books af Klint possessed in her personal library: F.W. Bain, *Modern Spiritualism*;⁴⁰ Annie Besant, *The Inner Teachings of Christianity*; Helena P. Blavatsky, *The Secret Doctrine*; Franz Hartmann, *Magic: White and Black*; Nizida, *The Astral Light*; and Baron Karl du Prel, *Teachings on the Soul*.⁴¹ Each of these sources demonstrate af Klint's interest in a pastiche of ideas ranging from esoteric Christianity to alchemy, Rosicrucian wisdom, and mystical experiences, to name a few. Fant's article also reveals that af Klint may have had an interest in the writings of seventeenth-century Christian mystic and German philosopher Jakob Böhme. Fant asserts, however, that the texts in af Klint's library were not titles generally accepted in the "origins of abstract painting."⁴²

For example, Besant and Blavatsky were two spiritual leaders and authors highly sought after and read by many European avant-garde artists and thinkers. Kandinsky and Steiner are two of those figures. Why does a specific title matter if the titles we know she owned include themes of esoteric philosophy and spirituality, subjects that many of her male contemporaries were studying at this time? What Fant's article

⁴⁰ Despite Fant's inclusion of this text in his footnote, it has been confirmed by the Hilma af Klint Foundation that Bain's work was not in af Klint's personal library based on their records.

⁴¹ Fant, "The Case of the Artist Hilma af Klint," 163.

⁴² Ibid., 156.

suggests is that af Klint did in fact have connections to the avant-garde by way of these intellectual genealogies and not only through her personal social network. In order to better understand her spirituality, life, and art, a few years later, Fant would write about her more in depth for his traveling exhibition and become the first scholar to describe her as a pioneer of abstract art in his text *Hilma af Klint. Ockult målerinna och abstrakt pionjär* (1989).⁴³ As one of the first scholars to seriously study the works of af Klint, Fant's contribution has played a pivotal role in shaping our understanding of af Klint in art history.

Af Klint became a member of the Theosophical Society the first year the Society in Scandinavia started in Sweden. Not long before she joined, she had begun to produce rough sketches of boats, Christ, and castles, as well as experiment with automatic writing.

⁴³ Åke Fant, *Hilma af Klint. Ockult målerinna och abstrakt pionjär* (Stockholm: Raster Förlag, 1989).



Figure 3: Hilma af Klint drawing of Christ from 1886 in Hak-1516_Haks3 by courtesy of the Hilma af Klint Foundation. Photo: Albin Dahlström/Moderna Museet, Stockholm, Sweden.

Among other visual representations of Christian and esoteric iconography, these images would become common motifs throughout the years spent with her séance group, in addition to the iconography present in her later large-scale paintings.

By 1896, af Klint and four other women founded De Fem.⁴⁴ De Fem was a séance group that met regularly to commune with spirits, in which 100s of automatic drawings and writings were produced.⁴⁵ Their meetings started with a prayer, a meditation, a sermon, and finally an analysis of one text in the New Testament followed by the séance.

⁴⁴ The group included Anna Cassel, Cornelia Cederberg, Sigrid Hedman, and Mathilde N. (last name unknown).

⁴⁵ Automatic drawing is a process of drawing in which the hand is guided without conscious effort.

As Klint's role was as a medium and her contact with the spirits they called "The High Ones."⁴⁶ The visual information produced in early De Fem drawings would become staples in the visual vocabulary for the group and eventually as Klint's large-scale spiritual paintings she is famously known for today.

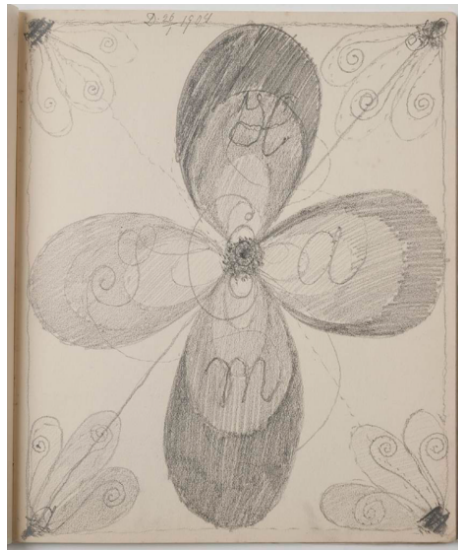


Figure 4: De Fem drawing from January 26, 1904 from Hak-1520 by courtesy of the Hilma af Klint Foundation. Photo: Albin Dahlström/Moderna Museet, Stockholm, Sweden.

As Klint's involvement with De Fem in tandem with her professional work demonstrates only part of her complexity as an artist and esotericist. Between the years 1900 through the early 1930s, af Klint would begin her well-known series the *Painting for*

⁴⁶ It is important to note here that there were two kinds of spirits. The High Ones had no names and were directing their views down to the ordinary spirits on the astral level in order for the latter to relay these messages to the human beings on the physical level. The ordinary spirits names were: Ananda, Amaliel, and Georg, to name a few most important.

the Temple (1906-1915), meet Steiner for the first time in Stockholm in 1908, publicly exhibit conventional works at the *Baltic Art Exhibition*, become a member of the Anthroposophical Society in 1920,⁴⁷ and rigorously tease out and work between scientific themes and spirituality in her visual art.

In 1944 af Klint passed away and stipulated in her notebook that some of her spiritual works not be shown until at least 20 years after her death.⁴⁸ Over 40 years later, in 1986, some of those works were shown in Tuchman's *The Spiritual in Art* exhibition in Los Angeles, California. This important moment highlighted, mainly, the works produced by af Klint after 1906 and one séance sketchbook from the 1890s. From this point forward, her later works take precedence over her early academic and automatic works produced with De Fem. Certainly, her large-scale paintings are of great significance.

However, the tendency to exclude more of her early works in the exhibition model often places her at the final stage of her artistic development and not how she arrived there. In this particular case, the "fundamental role of the myth reveals its function, backwards to explain the present."⁴⁹ In other words, to better understand af

⁴⁷ Af Klint left the Anthroposophical Society in 1930 and never returned to Goetheanum in Dorach, Switzerland.

⁴⁸ This stipulation can be found in archival notebook Hak_1049 at the Hilma af Klint Foundation.

⁴⁹ Dr. James Barrett, personal message to scholar, September 13, 2018.

Klint's art and spirituality, her works must be analyzed chronologically and comparatively, as early and late examples of her work provide a glimpse of the depth and range of her artistic concerns and the underlying structures and repetition of forms in both her drawings and paintings.

At the center of af Klint's exploration of spirit mediumship and esoteric thought is a controversy over the influence of Steiner on her development as an artist. The controversy postulates Steiner's alleged negative impact on af Klint between the years 1908-1912. A close reading of secondary scholarship analyzes the instances where scholars assert Steiner's negative impact on af Klint. A thorough review of each text and authors' sources demonstrate why we still need a clear story of af Klint in art history, and thus further emphasizes the importance of archival research and visual analysis.

The first known instance of scholarship to document the alleged account with Steiner was in Fant's *Hilma af Klint. Ockult målerinna och abstrakt pionjär* (1990).⁵⁰ Fant states:

By chance Rudolf Steiner, General Secretary of the Theosophical Association German Section and founder of Anthroposophy visited Hilma af Klint. Most likely the visit occurred in 1908. He witnessed the entire body of work which had been inspired by his lead and he expressed himself on the painting. There are only vague notes from the visit and the exact point in time is not completely

⁵⁰ Fant, *Hilma af Klint. Ockult målerinna och abstrakt pionjär*.

established. Steiner observed that he had no possibility to understand the work, but that it could be understandable approximately in fifty years.⁵¹

Based on his archival research, Fant states there are only *vague* notes on this alleged visit and that the exact timetable is not clear.⁵² This is extremely important considering the succeeding claims. The encounter may not have happened in 1908. According to Fant, a timeline had yet to be clearly established.

In 1996, Austrian art historian Konrad Oberhuber introduced a similar claim.

Oberhuber presents a provocative and compelling combined iconographic and intellectual history in “Artistic Form and Spiritual Experience: Some Observations”

⁵¹ Ibid., 24. This passage was originally published in Swedish. Passage translated to English by consultant, teacher, and writer in Stockholm, Sweden, Dr. James Barrett. Original passage: “Vid ett tillfälle besöktes Hilma af Klint av Rudolf Steiner, generalsekreterare i Teosofiska sällskapets tyska sektion och sedermera antroposofins grundare. Antagligen skedde det 1908. Han besåg hela den del av verket som hade inspirerats av ledarna och uttalade sig om målningarna. Det finns endast ganska vaga noteringar från det besöket och den exakta tidpunkten är inte helt klart fastlagd. Steiner påpekade att samtiden inte hade någon möjlighet att förstå verket, men det skulle kunna förstås cirka femtio år senare.” Archival materials must seriously be considered here in thinking about Fant’s claim. Notebook Hak_556 pages 527-528 at the Hilma af Klint Foundation, for instance, mention Steiner’s visit to Stockholm in association with a speech that he held. Af Klint detailed some questions that she wanted to ask Steiner as well. Steiner is also mentioned on pages 529, 542, and 560. However, it is uncertain based on these archival materials whether or not Steiner ever visited af Klint’s studio. *Nothing* is mentioned hereof in notebook Hak_556 and it is uncertain if it was ever mentioned in any other notebooks. Furthermore, the “50 year” claim can be understood as a fabrication by Fant. Hedvig Ahlén and Julia Voss are two important scholars who have both done extensive research on this subject.

⁵² Fant was working with archival materials. He documents in his bibliography that he looked at a large number of notebooks and loose paper from 1882-1944. He also looked at several reports from Rudolf Steiner lectures. Af Klint had access to a wide range of lectures during her visits to Dornach. He also examined af Klint studies from 1917-1918. Fant, *Hilma af Klint. Ockult målerinna och abstrakt pionj*, no page. He also suggests af Klint did not visit Dornach until 1913. Fant, *Hilma af Klint. Ockult målerinna och abstrakt pionj*, 27. However, Fant’s suggestion is wrong. According to the records at the Hilma af Klint Foundation, af Klint visited Dornach for the first time in 1920 *not* 1913.

(1996).⁵³ He highlights af Klint in his article, focusing on various states of her spirituality in terms of spatial experience: prehistoric space, modern conscious space, and Steinerian body-free space. Although he categorizes her as an abstract pioneer, he situates her within the predominately male hierarchy of the avant-garde. He also recalls an incident between af Klint and Steiner that demonstrates the ambiguity of the alleged encounter.⁵⁴ Oberhuber's choice to use *seems* and *might* demonstrates that his claim is speculative and lacks firm factual substantiation. There is no citation to support his statement. The uncertainty of Oberhuber's statement sets the tone for multiple histories written on af Klint that become inconsistent and speculative in both evidence and timeline.

Fant and Oberhuber's accounts were both published in the 1990s, a time when scholarship on the spiritual dynamic in modern art was underresearched. Furthermore, scholars tended to rely heavily on exhibition catalogue essays rather than close archival research. Thus, each account demonstrates how easily art historical assumptions can lead to art historical myths. Surprisingly, most published works have made little use of an important archival source, the Hilma af Klint Foundation. The Foundation was

⁵³ Oberhuber, "Artistic Form and Spiritual Experience: Some Observations," 86-97.

⁵⁴ Ibid., 91-92. "In 1908 Hilma af Klint encountered Rudolf Steiner, who seems to have told her that her work could not be immediately understood by her contemporaries. He might also have told her about the dangers of mediumistic practice. Steiner's teaching strove for a new kind of clairvoyance of the self. He regarded all elimination of consciousness in order to experience spiritual things as no longer timely for modern man. Whether Steiner talked to her about this or not, Hilma could have gathered this also from his writings. As a result, Hilma ceased to create new works for several years. Starting again in 1912."

established jointly by Erik af Klint and Johan af Klint in January of 1972, preserves the legacy of af Klint, and owns her artistic works and various other archival media such as sketches, sketchbooks, notebooks, and diaries.⁵⁵ The Foundation encourages and makes available over 26,000 hand written and typed pages for scholarly research purposes. Any scholar interested in a better understanding of af Klint should obviously be in direct contact with the Foundation.

Surprisingly, this is most often not the case and the 1908 encounter continues to appear in myriad forms throughout literature on the artist. Other scholarship began to point out the more complicated impact at the time of a wide set of esoteric and biographical influences on af Klint's development as an artist beyond Steiner. For instance, Curator and Director of Moderna Museet Iris Müller-Westermann's catalogue essay "Painting for the Future: Hilma af Klint – A Pioneer of Abstraction in Seclusion" in *Hilma af Klint – A Pioneer of Abstraction* (2013) highlights the "constant care" af Klint's mother needed when she went blind in 1908,⁵⁶ in addition to the visit Steiner made to af Klint's studio.⁵⁷ Westermann's citation for this quote comes from an entry af Klint wrote

⁵⁵ In 1967, all of Hilma af Klint's works were bequeathed to Johan af Klint by Erik af Klint.

⁵⁶ It is known from records at the Hilma af Klint Foundation that af Klint had the assistance of the nurse Thomasine Andersson in taking care of her blind mother.

⁵⁷ Iris Müller-Westermann, "Paintings for the Future: Hilma af Klint – A Pioneer of Abstraction in Seclusion" in *Hilma af Klint – A Pioneer of Abstraction* (Stockholm: Moderna Museet, 2013), 41-42. "Hilma af Klint's mother went blind in 1908 and needed constant care, so the artist gave up her studio at Hamngatan 5 and set up a working space at Brahegatan 52, where she and her mother also had an apartment. The same

in her diary on September 4, 1911. However, she uses the diary to reference “theosophy of the Rosicrucians by Dr. Rudolf Steiner” and not the alleged conversation between Steiner and af Klint.⁵⁸ More importantly, it demonstrates a rupture. Did af Klint cease painting for four years because her mother was sick or because of a dismissive encounter with Steiner? A close reading of Westermann’s passage indicates that af Klint began to explore other realms of esoteric thought rather than give up painting entirely. Oberhuber’s claim suggests the possibility of Steiner’s influence on af Klint while Westermann’s passage demonstrates a less dramatic encounter with no discussion of criticism on the part of Steiner. Nonetheless, the negative encounter persists through more contemporary literature.⁵⁹

Others have argued for a more direct and decisive influence of Steiner on af Klint’s development as an artist and assert further that “as Hilma af Klint’s work

year she met Rudolf Steiner for the first time; at that time, he was still the General Secretary of the German section of the Theosophical Society, and she showed him the works she had produced to date. She noted that Steiner particularly liked *Primordial Chaos*, No. 13, 15, 16, 17, 19 Group I, The WU/Rose Series, 1906-1907 (cat. 32-36), calling them the best, in terms of symbolism. Yet he was skeptical about the method of working as a medium. After this encounter, Hilma af Klint began exploring esoteric Christianity and studying Steiner’s book about the Rosicrucians,” 41-42.

⁵⁸ Ibid., 51.

⁵⁹ R.H. Quaytman, “Five Paintings from 1907: A Short History Lesson,” in *Legacy of Hilma af Klint: Nine Contemporary Responses* (London: Koenig Books, 2013), no page. Quaytman mentions the Steiner-af Klint encounter without referencing a source. She states, “Rudolf Steiner, the one person who af Klint hoped would accept and understand what she was painting, refused to exhibit it and sternly advised her to stop,” no page. In Westermann’s account, Steiner showed interest in af Klint’s works, but was skeptical of her method as a medium. Quaytman’s account suggests yet another layer, the alleged authority and power Steiner had over the artistic production of af Klint’s works.

increased in volume, so too did her willingness to show it to people outside of her circle of initiates.”⁶⁰ Who were these other people outside of her circle? The literature often states that she never showed her spiritual works to anyone other than her séance circle De Fem and Steiner.⁶¹ As recent as 2015, Spretnak writes the most sensationalist description of the Steiner-af Klint encounter with no citation, as her choice of language in describing the incident asserts the hostile nature of Steiner.⁶² Nonetheless, her overall analysis of the artist is excellent. In the case of af Klint, however, each author contributes intelligent and insightful essays that add something new to our overall understanding of

⁶⁰ Anna Maria Bernitz, “Hilma af Klint and the New Art of Seeing,” 593-594. Bernitz’s essay states with no citation, “When Rudolf Steiner...visited Stockholm in 1908 he was one of the first “outsiders” to view af Klint’s paintings. His observation that men and women had not reached the same point in their development and that the contemporary world could not possibly understand her art, but would be able to do so 50 years later, turned out to be correct. Her meeting with Steiner seems nevertheless to have turned out to be a disappointment. Maybe she had hoped that he would vindicate her, but instead he criticized spirit (mediumistic) painting. When she took up her brushes some four years later there was no longer a guide who “directed” them.”

⁶¹ It is important to note here that scholar Julia Voss is currently working extensively with af Klint’s archive to argue that she wanted to show her work to others. Af Klint was indeed restrictive in showing the *Paintings for the Temple* to third parties. However, in 1917, af Klint prepared the “Blue Books” that include a black and white photograph and a small painted miniature of each painting of the *Temple* series. The purpose was to be able to carry the books around with her to show the *Paintings for the Temple* to third parties. Voss aptly describes these small scale works as a “museum in a suitcase.” Additionally, in 1928, af Klint participated with some of her nonobjective paintings in the Anthroposophical exhibition in London. New and emerging scholarship thus questions the secondary literature based on close archival research. For more information see Christine Burgin, ed., *Hilma af Klint: Notes and Methods* (Chicago: University of Chicago Press, 2018).

⁶² Spretnak, *The Spiritual Dynamic in Modern Art*, 80. Spretnak states, “When Rudolf Steiner came to Stockholm to lecture, in 1908, Af Klint invited him to view her spiritual paintings in her studio, which he did. He became angry, told her she was not supposed to have direct access to the spirits, and was particularly disapproving of a figurative painting entitled *Evolution* in which she had painted the male and female figures on the same level of a spiral, which, he said, was thoroughly incorrect. Af Klint was so shaken by Steiner’s response to her work that she did no painting of any kind for four years.”

the artist. More importantly, the secondary scholarship demonstrates the significance of primary sources and archival research to extract evidence from original records.

What really happened between Steiner and af Klint? Was it as dramatic as some scholars suggest? Was her decision not to paint a decision based on the condition of her mother's health and less about Steiner? Did Steiner praise af Klint's works but suggest she develop new methods of execution? The scholarship written on the 1908 encounter clearly demonstrates it could be any one of these scenarios.⁶³

⁶³ Jennifer Higgle, "Longing for Light: The Art of Hilma af Klint," in *Hilma af Klint: Painting the Unseen* (London: Koenig Books, 2016), 16. Higgle states, "Between 1906-08 she executed 111 paintings; she stopped for four years to look after her mother, to whom she was very close, and who had lost her sight. During this time, af Klint became deeply immersed in Rudolf Steiner's writings; he believed in an ideal life as one that balanced opposing forces, and that spiritualism should be accorded the same respect as the natural sciences. Steiner visited af Klint's studio in 1908, when he was the General Secretary of the German section of the Theosophical Society, but although he admired some of her paintings, he was critical of af Klint's work as a medium and declared that her art would not be understood for 50 years. His judgement apparently devastated her and possibly affected her decision not to allow her paintings to be seen until two decades after her death." Note Higgle's use of *possibly*. Much like Oberhuber's uncertainty demonstrated in his 1996 essay, Higgle also demonstrates the speculative nature of the Steiner-af Klint encounter.

3. Analyzing the Crisis

Digital methodologies may offer another way of analyzing this alleged 1908 crisis and the works of af Klint, in combination with other traditional art historical methods employed in this study. Iconographic and visual analysis allow for an examination of the spiritual dynamic in modern abstract painting that indicate af Klint's ambiguous position in the canon. A deep dive into the scholarship written about af Klint in particular shows that the extensive archival sources that also allow for a visual analysis of af Klint's early sketches have not yet been mined. These historical methods problematize the validity of the 1908 af Klint-Steiner encounter revealing that it likely did not occur as written, if it occurred at all.⁶⁴ If traditional methods of close reading question the af Klint-Steiner encounter what might data visualization, distant reading, and other forms of computational modes tell us about this particular moment?

3.1 *Digital Methodology*

Art and technology are now interlinked more than ever. More importantly, technology seemingly allows for a deep and penetrating analysis of spirituality and visual culture. For instance, digital data and digital humanities provide scholars with

⁶⁴ It must be noted that this study is not questioning whether af Klint knew Steiner. Af Klint certainly knew Steiner and was clearly interested in his philosophy. This study is only concerned with the alleged 1908 encounter as stipulated in secondary scholarship.

the capability of making invisible data recognizable in ways that aren't possible through traditional analog methods of inquiry.⁶⁵ Thematic research collections are a case in point, and are particularly important throughout this study, as I develop typologies to test them through analog and digital methods. Libraries now amass collections of digitized texts so researchers can virtually access large bodies of material with a focus on thematic content for an exploration of events and phenomena across a large corpus of texts and image databases. This is a process that through traditional methods would take quite a bit of time and would more than likely reveal less interesting results than what computation can disclose quickly.

Media theorist and philosopher Boris Groys touches on the potential metaphysical power of the machine in his book *In the Flow* (2016). He states, "The digital age does not only effectuate a return to nature, but also a return to the supernatural."⁶⁶ Scholars now have the power and control to manipulate and invoke previously

⁶⁵ Note this is not the first instance technology is employed for a closer look at the *unseen*. See Tessel Bauduin, "Science, Occultism, and the Art of the Avant-Garde in the Early Twentieth Century," *Journal of Religion in Europe* 5, no. 1 (2012): 23-55. Bauduin discusses the avant-garde's interest in occultism. The avant-garde borrowed and used scientific concepts and terms as a way to define their own occult discourses. Bauduin specifically discusses n-dimensionality, wave phenomena, and radiation phenomena. These scientific discoveries pointed towards the invisible, providing the proof the avant-garde needed to break with tradition and validate the spiritual dimension of their works of art. Her article is important insofar as it helps us think about the high visibility of science and modern culture. Further research might include Oliver Joseph Lodge, *The Ether of Space* (Chicago: Sequoyah Books, 2003). This text was originally published in 1909. It expands on the branch of physics dealing with ether.

⁶⁶ Boris Groys, *In the Flow* (New York: Verso, 2016), 144.

inaccessible data that can potentially offer exciting new possibilities, introduce new questions, and hopefully reveal new results across disciplinary fields with the assistance of digital and computational methods. Nonetheless, the digital can often lead to a struggle for truth and interpretation, as an understanding of the graphical format varies depending on the visualization itself, in addition to the language we assign to the visualization in order to articulate meaning. Therefore, it is imperative that engagement with digital methods is careful and critical in order to avoid bias and misinterpretation.

The earliest digital art history projects focused on scale, especially on building up digital resources. This is important for this project, as the scale of archival materials is immense and requires a great deal of organization in order to efficiently mine the images within the years selected. Much effort was spent, for example, with data such as images and texts accompanied by metadata where the content could be easily stored in one central location and with the opportunity to share online. Art historian Pamela Fletcher discusses early scholarly digital repository projects in “Reflections on Digital Art History” (2015).⁶⁷ Fletcher’s focus on the scholarly projects of Jerome McGann’s *Rossetti Archive*, *Closer to Van Eyck: Rediscovering the Ghent Altarpiece*, led by Ron Spronk, and *Mapping Gothic France*, led by Stephen Murray and Andrew Tallon demonstrates her

⁶⁷ Pamela Fletcher, “Reflections on Digital Art History,” *CAA Reviews*, June 18, 2015, <http://www.caareviews.org/reviews/2726#.W2ibhy2ZOgR>.

characterization of the digital as a means of organizing intellectual property and visual culture that can be widely shared and accessed online by scholars and researchers.⁶⁸ Fletcher distinguishes recent directions in the field and suggests digital art history's deeper consideration and understanding of how digital media and technology act as "a means of doing research" that has the potential to introduce new questions or relationships that may through traditional methods go unnoticed.⁶⁹

This brings us to the significance of analytic visualization and the significance of comparing and analyzing term types based on close visual analysis of af Klint's sketches with De Fem. As digital humanists and scholars continue to engage with computational modes, the means of doing research that Fletcher describes becomes more expansive. For instance, visual theorist and cultural critic Johanna Drucker discusses other modes of display, visualization, and organization in *Graphesis: Visual Forms of Knowledge Production* (2014).⁷⁰ In contrast to Fletcher, Drucker is interested in how scholars critically engage with and analyze graphical forms of knowledge with particular attention paid to both historical and contemporary charts, maps, and diagrams. Drucker's qualitative humanistic inquiry analyzes historical and contemporary graphical representations. To

⁶⁸ Ibid. See also Ben Zweig, "Forgotten Genealogies: Brief Reflections on the History of Digital Art History," in *What is Digital Art History* no. 1 (2015): 39-49.

⁶⁹ Ibid.

⁷⁰ Johanna Drucker, *Graphesis: Visual Forms of Knowledge Production* (Cambridge: Harvard University Press, 2014).

observe and analyze these models, the interpreter should have some familiarity with the language embedded in these forms of knowledge production. This is important since Drucker urges us to take a closer look at graphical models and networks in order to better understand not only their interpretative capabilities, but also the assumptions embedded within them.⁷¹ In this case, might a visualization of linguistic typologies compared to af Klint's visual vocabulary create a new way of evaluating the af Klint-Steiner encounter. Graphs, charts, and network visualizations, however, may not always provide the best insight into humanistic inquiry. Nonetheless, they often introduce new questions and alternative ways of seeing and understanding research.

Finally, analytic text analysis might also tell us something different about the af Klint-Steiner encounter. Literary studies and art history both employ digital methods as a means of engaging with quantifiable data. This method of research is based on the availability of an abundance of digitized texts and ebooks found in digital libraries online such as Project Gutenberg and HathiTrust, among others. With the assistance of document digitization and text scanning software such as ABBY FineReader, scholars

⁷¹ Further reading on Drucker's critical perspective and the potential challenges faced when attempting to address graphical forms of knowledge can be found in her essay "Graphical Approaches to the Digital Humanities," in *A New Companion to Digital Humanities* (United Kingdom: Blackwell, 2016), 238-250. In this text, Drucker cites the works of 19th century mathematicians, contemporary engineers, and statisticians, to name a few.

and research practitioners can digitize and enhance texts for research purposes affording them the opportunity to analyze a large corpus.⁷²

One of many literary scholars employing this method is Franco Moretti. Moretti is known not only as one of the founders of The Stanford Literary Lab (2010), but for his development of the paradigm of distant reading. Moretti believes in the power of assembling and analyzing monumental amounts of data. He is confident that close reading and qualitative analysis are not enough to reveal the true scope of literature. He explores this in his book *Distant Reading* (2013) where he employs the computational method of network visualization and plot analysis to better understand, for example, the relationship between characters in *Hamlet*.⁷³ The significance of Moretti's network structure lies in its ability to quantify plots in literature. More noteworthy, Moretti stresses the importance of leaving room for intuition and experimentation when it comes to network graphs, as most network visualizations don't provide hard evidence.

Overall, some computational methods have been used for organization, visualization analysis, and experimentation. Fletcher, Drucker, and Moretti highlight

⁷² To illustrate, see "The Proceedings of the Old Bailey, 1674-1913" project which includes the largest body of texts detailing the lives of non-elite people ever published, containing 197,745 criminal trials held at London's central criminal court. "The Proceedings of the Old Bailey: London's Central Criminal Court, 1674-1913," Old Bailey Proceedings Online, accessed September 18, 2018. <https://www.oldbaileyonline.org/index.jsp>.

⁷³ Franco Moretti, *Distant Reading* (New York: Verso, 2013), 211-240.

and carefully engage with each in order to fully understand the contributions and constraints of these methods in humanistic fields. What follows includes how I came to employ digital methods and the experiences and the problems I faced using these methods to examine the af Klint-Steiner connection introduced in this study.

3.2 Early Stages of the Project

My initial approach rested on exploring broad patterns (if any) in the conceptualization of the spiritual in art and whether or not the digital can clarify priorities in the literature. The early stages of my study were restricted to how spirituality was understood in two major art exhibitions known to promote themes of spirituality in modern and contemporary art: *The Spiritual in Art: Abstract Painting 1890-1985* and *Traces du sacré* (2008).⁷⁴ Additionally, the early stages paid particular attention to the full exhibition history of af Klint. The exhibitions were chosen for three primary reasons: *The Spiritual in Art* was the first major exhibition in the USA to publicly address the inner lives of modern artists, *The Spiritual in Art* is known to be the exhibition that introduced af Klint's spiritual works to an international audience for the first time, and *Traces* is understood as the exhibition that picked up where *The Spiritual in Art* left off.

⁷⁴ Mark Alizart, *Traces du sacré*, exh. cat. (Paris: Centre Pompidou, 2008).

I created datasets from these secondary sources of all artworks featured in both exhibitions and a dataset of af Klint's exhibition history in Excel.⁷⁵ Each dataset was created and structured with a specific purpose or question in mind: How does the digital help us to understand af Klint's public reception over time? Does exhibition history illuminate af Klint's sometimes assigned role as an 'abstract' pioneer; and does this history link her to the European avant-garde? As just one example, does the scholarly understanding of the social network demonstrate a gender bias? How is the spiritual dynamic in modern art defined based on the works of art featured in exhibitions with spiritual themes?

As a key first step to answer these questions, I needed to extract and clean the data to make it viable for computational analysis and visualization. I scanned the pages of *The Spiritual* and *Traces* catalogues with the hope of successfully and efficiently converting digitized text into manipulable data. In the *Spiritual* catalogue the exhibition pages including all paintings and works on paper listed in a checklist were scanned and opened in Adobe Acrobat Reader. This data in particular was arranged in five sections in the catalogue: Symbolism, The Generation of the Abstract Pioneers in Europe, The Generation of the Abstract Pioneers in America, Abstract Painting in Europe and

⁷⁵ See Appendix B for partial data structure in Excel.

America 1939-70, and Abstract Painting in Europe and America 1970-85. In Acrobat, the PDFs were converted to image files (.tiff). After the conversion of PDF to image file, I opened the PDF in Preview and cut the image files by column based on the five-section exhibition arrangement and developed a file naming convention for each cut. I also created duplicates of all files. Once I had finished cutting each column in Preview, I reopened each cut and combined images into a single PDF document. I ran optical character recognition (OCR) software once the new document was saved. However, perhaps due to the quality of the original scan, the OCR of the PDF was inconclusive. Meaning, the program didn't recognize the structure of the document images as the original and thus was unsuccessfully searchable.

I then exported out a plain text file and opened it in free open-source text editor Atom. After my initial data cleaning, however, I found that my digital workflow was not as efficient as I had anticipated. Regular expressions were more helpful insofar as I could look for words and/or patterns with just one search instead of many.⁷⁶ This is a remarkable tool that helps locate words spelled two different ways among other inconsistencies in order to quickly clean and analyze texts. Nonetheless, regular expressions were only so helpful considering how messy the data turned out. After

⁷⁶ Regular expressions or regex is, in theoretical computer science, a sequence of characters that define a search pattern. In other words, an expression used to specify a set of strings for a particular purpose.

many hours of arduous data cleaning, I exported some of what I had completed to a CSV file. I did this to test what the data would look like in a spreadsheet format.

Unfortunately, the data was not as organized as I had anticipated. After experimenting with Atom longer, I ran another test. Finally, I decided that manual entry was more efficient. After six total hours of manual entry, I had a clean and organized dataset.

In this particular case, manual entry was far more expedient than using text editing software, which may have been more practical had I been customizing and coding large amounts of text. Thus, once I began the second dataset for *Traces*, I eliminated my original digital workflow and started with manual entry. Once these three datasets were completed, I was able to create visualizations in Tableau and Palladio to test some of the historiographical questions.

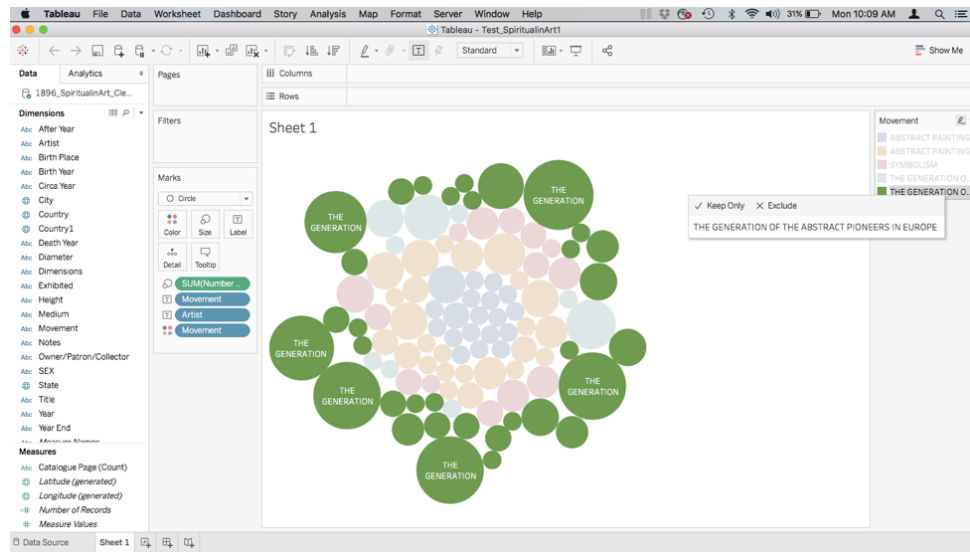


Figure 5: Tableau visualization.⁷⁷

Visualizations in Tableau using, for example, *The Spiritual* dataset show that the first generation of the abstract pioneers takes precedence in the 1986 show. This raises questions about how we understand the temporal categorization of abstraction. For instance, how do the artists included in the *Spiritual* exhibition's category of the Generation of Abstract Pioneers change in subsequent exhibitions? Are there identifiable weaknesses in who is defined as an abstract pioneer based on temporal dynamics of categorization processes over time? Interesting and further research might be done, in

⁷⁷ How do we understand context categorization based on data visualization? The circles are arranged in rings based on the five categories stipulated in the exhibition catalogue indicating that the category The Generation of Abstract Pioneers in Europe took precedence over Abstract Painting in Europe and America which is located in the center. The differentiation in size is dependent on number of works exhibited by each artist. The larger the circle, the more works of art included in the show by that specific artist.

this regard, using exhibition catalogues to see how artists in the 1986 exhibition have been categorized compared to the same artists in the *Traces* show. For my process, I believed that applying this method to multiple catalogues on similar content might reveal new and interesting insight on how perspectives on spirituality and modern art have changed over time, and whether or not spirituality is synonymous to abstraction.

To further investigate af Klint, I moved beyond the two spiritual exhibitions that explicitly analyzed catalogues to an examination of her complete exhibition history.⁷⁸ A closer evaluation of this history reveals that her works have been featured mostly in group exhibitions. This information, however, can be found simply by looking at af Klint's exhibition history without a visualization. Initially, my interest in visualizing af Klint's exhibition history was based on a curiosity around where her works were shown over time compared to Kandinsky's. This considers the possibility that exhibition history might disclose new information about how art history continues to connect af Klint to Kandinsky.

⁷⁸ Af Klint's full exhibition history is documented on the Hilma af Klint Foundation's website: <https://www.hilmaafklint.se/exhibitions-eng/#Past%20Exhibitions>.

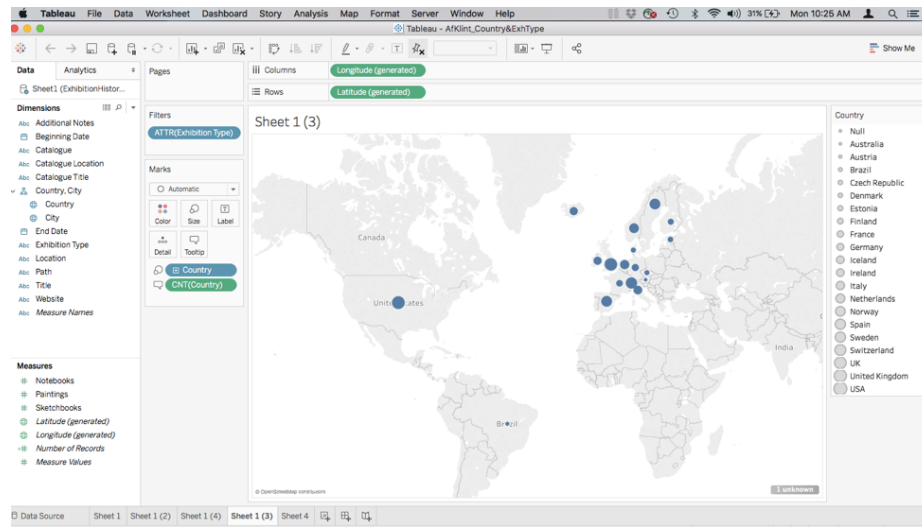


Figure 6: Tableau visualization showing the majority of af Klint's works have been shown in the USA, UK, Switzerland, and Sweden based on the size of each circle. Each country is marked by a centrally located representative dot that indicates how many group and solo exhibitions af Klint has had combined.

Instead, I became curious about number of works per exhibition, country, and type. This was an attempt at trying to understand demographic and public reception over time. This map, for example, determines that the majority of her works have been shown in the USA, UK, Switzerland, and Sweden. I then animated af Klint's full exhibition history and was able to see how her works moved over time. This would be a wonderful tool to use in comparing her exhibition history and reception to Kandinsky's,

as it affords the opportunity to re-evaluate the art world affinity to link Kandinsky and af Klint through an analysis of each artists' public reception across time.⁷⁹

The comparisons between each exhibition show that af Klint surprisingly dominates merely quantitatively according to the number of works exhibited.

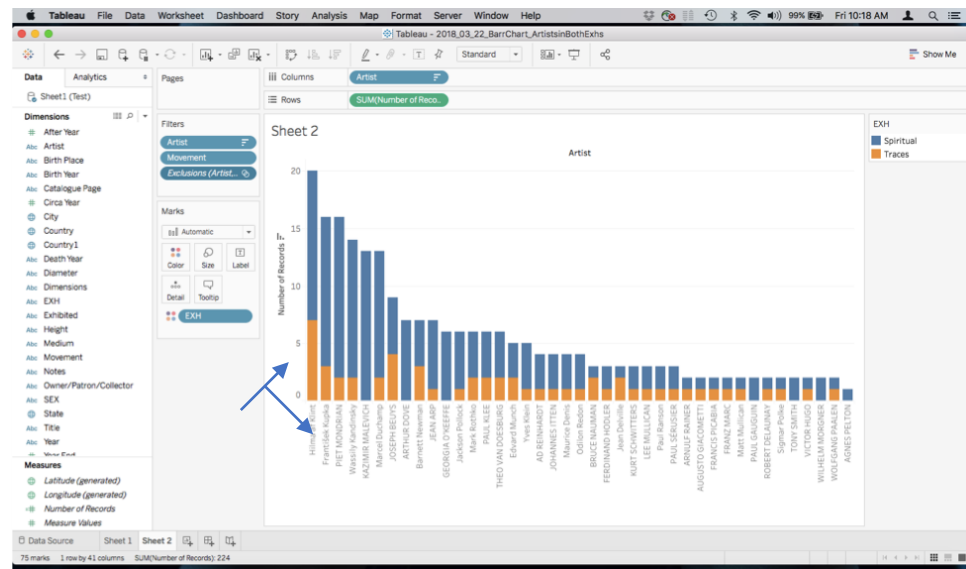


Figure 7: Af Klint shown as dominant artist in both *Spiritual in Art* and *Traces du sacré* exhibitions.

Kandinsky has exponentially fewer works in *The Spiritual*. Obviously, there could be many factors that could explain this imbalance of works, including purely logistical considerations. Nonetheless, the visualization interrogates the literature on modern art

⁷⁹ For an example of the intersection of geographic concepts and digital mapping methods see Paul Jaskot and Anne Kelly Knowles, "Architecture and Maps, Databases and Archives: An Approach to Institutional History and the Built Environment in Nazi Germany," *The Iris*, last modified February 15, 2017. http://blogs.getty.edu/iris/dah_jaskot_knowles/.

and spirituality that often assigns the dominant role to Kandinsky. The visualization suggests, based on number of works, that af Klint is the dominating spiritual artist in each exhibition rather than Kandinsky. These findings suggest re-evaluation and further research on how *pioneering* roles are assigned within the museum context.

These early data visualizations of this project were designed to help think about this history in a new way. I focused on gender in the beginning because it was a straightforward way of getting used to working in Tableau. What it revealed, however, was that af Klint was the principle female artist in both exhibitions. This is interesting, and questions and probes the literature that often assigns the prevalent role to Kandinsky. In fact, figure seven shows that af Klint, Franktišek Kupka, and Piet Mondrian had more works featured in both shows than Kandinsky. Although the museum model is important to the extent that it's an institution that influences how publics understand cultural heritage, the curator's interpretation of a specific kind of content or cultural heritage can sometimes lead to narrow histories.

The digital methods employed early in this study did introduce new questions and new ways of understanding spirituality and modern art. Still, they did not provide focused insight into af Klint's biography and the dilemma of the af Klint-Steiner connection propagated throughout much of the secondary scholarship on the artist. Early visualizations in Tableau did provide evidence that a gender bias exists in each

exhibition between the quantitative number of works shown and the qualitative assertion of Kandinsky's centrality. More importantly, af Klint's dominant role as a female artist in each exhibition creates a rupture in the narrative propagated in much of the secondary scholarship on the topic.

After close consideration of these early methods, I developed a typology for the images in af Klint's sketchbooks. This became the method I focused on to provide the best insight into af Klint's work and the alleged encounter between her and Steiner. An analysis of recurring symbols and themes in her early sketchbooks before 1908 and after 1912 is imperative to understanding the alleged encounter with Steiner. Additionally, the typology charts the evolution and consistency of symbols and themes in her work across time that shape a better understanding of af Klint as a truly remarkable artist whose early works with De Fem must be closely evaluated.

3.3 Developing a Typology: Timeline 3D

A close reading of secondary scholarship obscures af Klint's biography around the four-year time period in which she ceased painting, particularly in regard to the alleged 1908 af Klint-Steiner encounter. In order to investigate this moment further with computational methods, I first contacted the Hilma af Klint Foundation in Stockholm, Sweden to gain access to digitized versions of af Klint's diaries and sketchbooks. With the timeframe of 1908-1912 in mind, I requested archival materials from between the

years 1895 and 1923.⁸⁰ As I began to sift through archival materials, I had several biographical and visual source questions in mind: Can visual analysis of early works tell us something about the works produced before and after the alleged Steiner encounter; How do the sketchbooks evolve over time and contradict or not what art history says about the alleged encounter with Steiner; And was there a significant change in af Klint's visual language beginning in 1912? Considering the nature of the claim that Steiner influenced af Klint to cease painting for four years based on her method as a medium, one might think there would be a significant shift in her visual language and symbolism once she began painting again in 1912.

I chose to examine nine sketchbooks produced by af Klint and her séance group De Fem between the years 1895 and 1913. Eight of the nine sketchbooks were produced between 1895 and 1908.⁸¹ The remaining was made between 1912 and 1913.⁸² The range of archival materials were chosen with the intent of completing a visual analysis of each drawing within the eighteen-year time period to determine whether af Klint's visual

⁸⁰ The year 1896 marks the first known written notes by af Klint's séance group De Fem.

⁸¹ Archival materials courtesy of Hilma af Klint Foundation: HaK1516_HaKs3 (1895-1899), HaK1515_HaKs2 (1896-1897), HaK1514_HaKs1 (1896-1898), HaK1518_HaKs5 (1902-1903), HaK1519_HaKs6 (1903-1904), HaK1520_HaKs7 (1903-1904), HaK1526_HaKs13 (1905-1906), and HaK_1175 (1908). Notebook HaK_556 (March 1908) provides important information, as mentioned earlier in the paper, about the alleged Steiner encounter. However, this particular notebook was not visually analyzed.

⁸² Archival material courtesy of Hilma af Klint Foundation: HaK562 (1912-1913).

language was consistent over time or dramatically changed beginning in 1912 when she is known to have started painting again.⁸³

The best way to examine these works involved quite a bit of organization using the multimedia desktop program Timeline 3D. Timeline 3D allows users to present historical events to reveal thematic connections chronologically and clarify relationships. More importantly, Timeline 3D includes the option to develop a tagging system for each image that allow for the categorization of events affording the option to search through the timeline. In this case, the tagging system was developed by examining and pulling out prominent themes and symbols from 270 drawings produced between 1895 and 1913.⁸⁴

⁸³ Note that there are two notebooks from the four-year gap: HaK1166 (1909) and Hak557 (1909-1911). However, these notebooks predominantly include text. HaK1166 (1909) is described as the “Blue Book” “Gusten’s Notes,” not Hilma af Klint’s handwriting and Hak557 (1909-1911) is a description of symbols, signs and paintings. Since both of these notebooks consist of text with few images, I decided not to include them in my study.

⁸⁴ Tagging and developing visual typologies is important for both analog and digital art history. It is important for analog methods because the typology allows art historians to describe and understand the visual features of a work of art and subsequently analyze their effects and changes over time. In regard to the digital, tagging terms and visual typologies afford the opportunity to search large image repositories for common motifs and themes. Thus, culling only the works of art that fall within the search term. This is beneficial for researchers looking at how certain symbols and themes persist or regress over time or if there are gaps between when certain symbols or themes were most prevalent, to name a few. See document appendix on pages 80-82 for full list of tagging terms. Further reading might include Lev Manovich’s “How to Compare One Million Images?” in *Understanding Digital Humanities* (New York: Palgrave Macmillan, 2012), 249-278. This article explicitly addresses computational approaches needed to deal with the exploration of large scale collections. The method used combines digital image analysis and visualization technique.

The timeline created in Timeline 3D positions the drawings according to their year of origin. Next to the thumbnail image, the details of year dates, historical, and biographical information are displayed. Organizing the sketches this way provides the opportunity to look at all of the images within the selected years that include specific symbols and themes such as evolution, ascension, boats, organic and geometric shapes, water, and flora, to name a few. The timeline revealed that the iconography was consistent throughout these years. In fact, although the aesthetic of the symbolism became more defined, pronounced, and detailed over time, the content stayed the same. For instance, flowers and flora are prominent themes throughout the sketchbooks that over time shift from graphite, automatic drawings to colorful mimetic representations of the subjects themselves. The subjects were addressed with more technical precision over time; but the symbolism stayed consistent suggesting that the Steiner encounter had no influence over the content of af Klint's works.

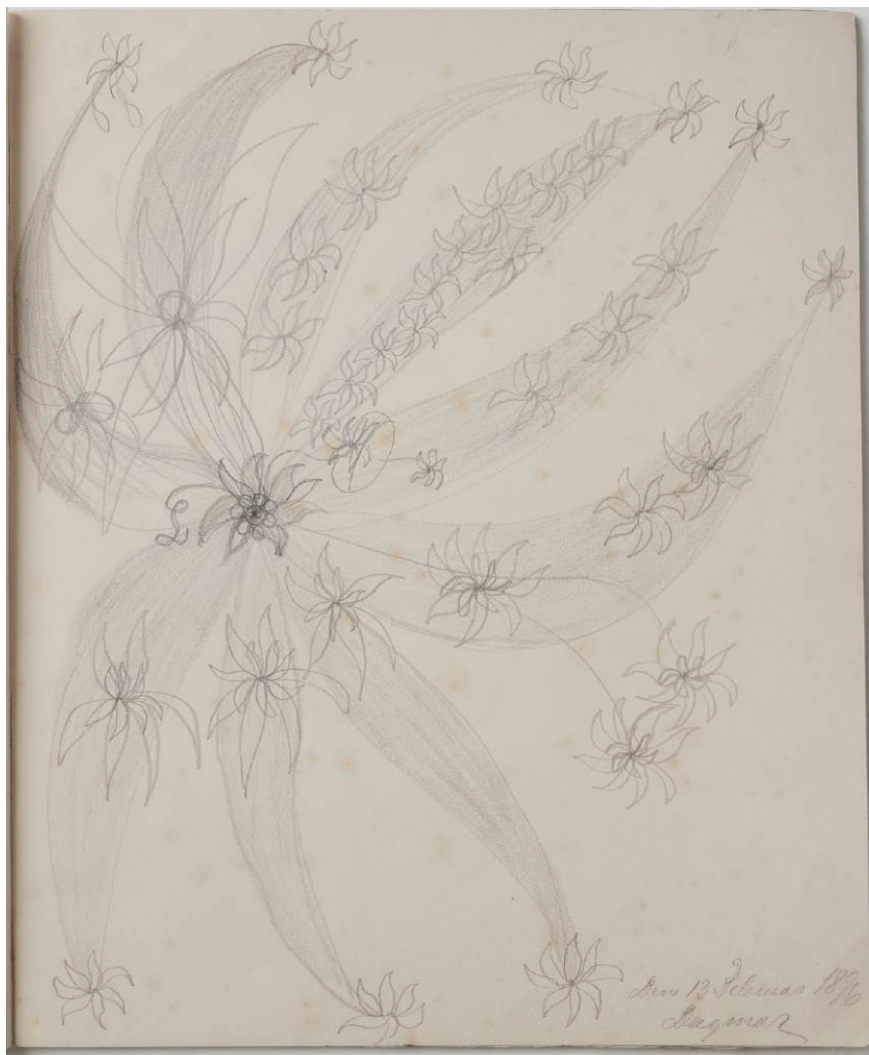


Figure 8: Sketchbook from 1896 featuring flora in Hak1516_Haks3 by courtesy of the Hilma af Klint Foundation. Photo: Albin Dahlström/Moderna Museet, Stockholm, Sweden.



Figure 9: 1903 De Fem flora and crucifix automatic drawing in Hak1518_Haks5 by courtesy of the Hilma af Klint Foundation. Photo: Albin Dahlström/Moderna Museet, Stockholm, Sweden.

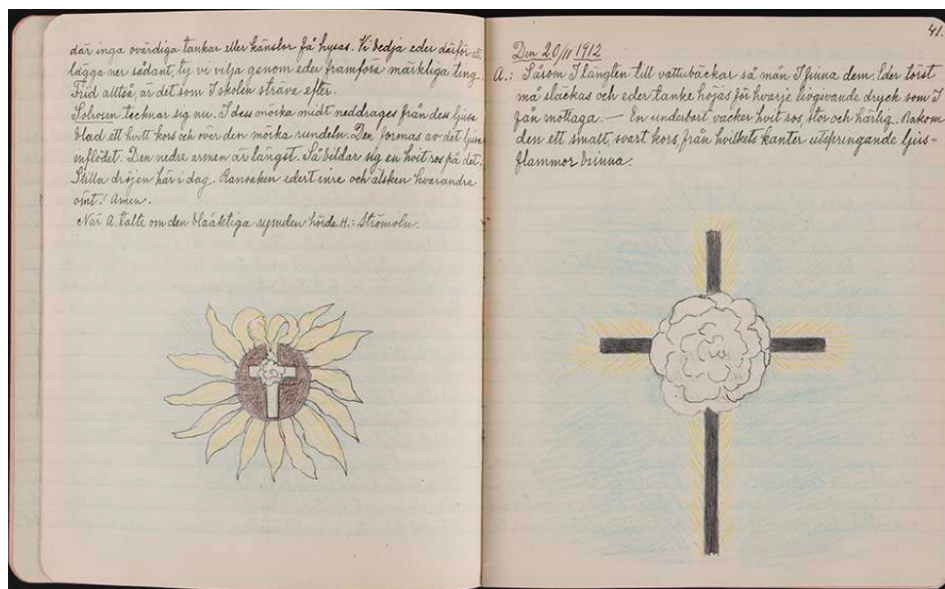


Figure 10: 1913 colored flower in Hak562 by courtesy of the Hilma af Klint Foundation. Photo: Albin Dahlström/Moderna Museet, Stockholm, Sweden.

Although Timeline 3D offered the opportunity to organize art historical information in a format that is easily searchable and introduced new questions about af Klint's early spiritual works and the nature of her séance group, it is not without flaws. For example, the thumbnail images are very difficult to see in timeline view, making the visual evidence less viable.

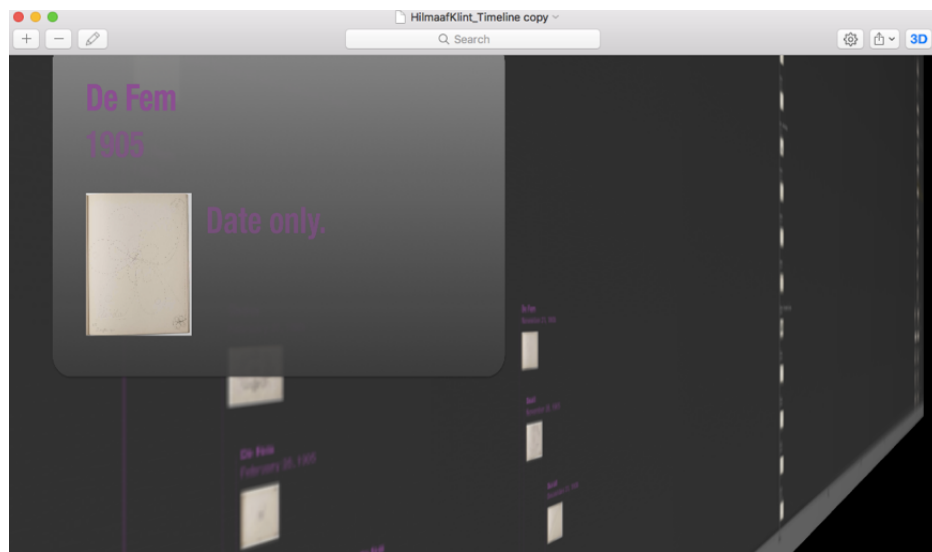


Figure 11: Thumbnail image in 3D view.

Additionally, the program has some difficulty saving tagging terms to its appropriate image, which led to quite a bit of backtracking and redoing tagging systems. Regardless, positioning the early sketches in chronological order by date made viewing much more accessible, as many of the drawings in the original digitized archival materials include multiple years in one book.

Organizing af Klint's works on a timeline such as the Timeline 3D model can act as a prototype for a potentially larger scale af Klint project that includes more thorough visual analysis and intensive biographical information. An extended version has the potential to resolve some of the discrepancies around af Klint's life and works. For instance, organizing her total oeuvre of academic work, automatic drawings, and spiritual paintings in a database affords the possibility to use metadata in order to research the large collection of her work. This might offer a searchable and efficient platform for researchers to critically engage with consistent themes and iconography present in her work across time.

An example on a larger scale, potentially for a museum exhibition, might be something like Tate Modern's *Bloomberg Connects: The Timeline of Modern Art*.⁸⁵ The interactive timeline allows millions of visitors immediate access to a large number of artworks in Tate's archives. Urban Complexity Lab's "Past Visions" project is another more detailed example of how af Klint's drawings might be organized in the future.⁸⁶ The visualization shows the collection of Frederick William IV of Prussia's (1795-1861) drawings alongside a thematic and temporal arrangement. The "Past Visions" project

⁸⁵ Tate's timeline can be explored briefly here:

https://www.youtube.com/watch?time_continue=46&v=2WT1P8Botek.

⁸⁶ "Past Visions," Potsdam University of Applied Sciences, accessed June 5, 2018, <https://uclab.fh-potsdam.de/fw4/en/>.

“aimed at investigating the potentials inherent to visual exploration of digitized collections.”⁸⁷ Linking structure and texture of a collection of drawings in this way allows for a closer examination of historical artifacts that result in dynamic and interactive methods of researching and presenting historical information.⁸⁸

Typologizing and analyzing af Klint’s early sketches with De Fem should be considered by museum professionals and scholars interested in understanding her works. Organizing early drawings demonstrates that the symbolism in the automatic drawings and sketches maintain consistency throughout the early years and on to af Klint’s larger spiritual paintings produced from 1906 forward. By the time she began producing large-scale paintings, she had already worked as a professional draughtsman, produced naturalistic and botanical works, and 100s of automatic drawings with De Fem. All of these moments are important in understanding af Klint as a truly remarkable artist. The typology developed from an analysis of these early sketches reveals consistent iconography before 1908 and after 1912. Thus, this evidence suggests that the Steiner encounter did not influence af Klint’s visual vocabulary in the manner that the

⁸⁷ Katrin Glinka, “Linking Structure, Texture and Context in a Visualization of Historical Drawings by Frederick William IV (1795-1861),” *International Journal for Digital Art History* 2 (2016): 202.

⁸⁸ See Johanna Drucker, “Is There a “Digital” Art History?,” *Visual Resources* 29 (2013): 5-13, doi: 10.1080/01973762.2013.761106. Drucker postulates that approaches such as topic modeling, structured metadata, visualization of information, network analysis, and so forth are “all touchstones of new practice and thought...ways of thinking with digital processes,” 7.

scholarship has asserted. Despite these results, I began to consider further how distant reading and data visualization methods might question and probe this biographical dilemma. Can an exploration of the typology developed in Timeline 3D strengthen our understanding of this particular moment?

3.4 Distant Reading: AntConc

Distant reading was initiated by Moretti as a way of approaching literature and other arts both qualitatively and empirically. Often, distant reading is a quantitatively informed method of understanding literature whereas close reading is a careful and analytical technique often employed while doing research. Digitized texts enable scholars and research practitioners to explore linguistic and semantic characteristics. This allows for the production of new meaning such as whether or not primary texts of Klint were known to have read, possessed in her personal library, or would have likely been familiar with at the time have any relationship to her visual vocabulary.

I employed Laurence Anthony's AntConc, a freeware corpus analysis toolkit, to determine the frequency of terms developed in Timeline 3D from the analysis of Klint's early sketches with De Fem. Experimenting and analyzing seven texts, one with three volumes, is one method I employ to re-evaluate the Klint-Steiner encounter. The

texts include: Johann Wolfgang von Goethe, *Theory of Colors* (1810);⁸⁹ Charles Darwin, *On the Origin of Species* (1859);⁹⁰ Blavatsky, *The Secret Doctrine*, Volumes I and II (1893);⁹¹ Blavatsky, *The Secret Doctrine*, Volume III (1897);⁹² Besant, *Thought Forms* (1901);⁹³ Besant, *Esoteric Christianity or the Lesser Mysteries* (1905);⁹⁴ Steiner, *The Way of Initiation* (1908);⁹⁵ and Steiner, *Christianity as a Mystical Fact* (1914).⁹⁶ These texts were chosen for

⁸⁹ Johann Wolfgang von Goethe, *Theory of Colours* (London: John Murray, Albemarle Street, 1840). <http://www.gutenberg.org/files/50572/50572-h/50572-h.htm>.

⁹⁰ Charles Darwin, *On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life* (London: W. Clowes and Sons, 1860). <http://www.gutenberg.org/files/22764/22764-h/22764-h.htm>.

⁹¹ Helena P. Blavatsky, *The Secret Doctrine: The Synthesis of Science, Religion, and Philosophy*, Volume I & II (London: Theosophical Publishing House, 1893). <http://www.gutenberg.org/files/54824/54824-h/54824-h.html>; <http://www.gutenberg.org/files/54488/54488-h/54488-h.html>. Hilma af Klint owned a Swedish copy according to the list of af Klint's literature provided by Johan af Klint at the Hilma af Klint Foundation in Stockholm, Sweden.

⁹² Helena P. Blavatsky, *The Secret Doctrine: The Synthesis of Science, Religion, and Philosophy*, Volume III (London: Theosophical Publishing House, 1897). <http://www.gutenberg.org/files/56880/56880-h/56880-h.html>. Hilma af Klint owned a Swedish copy from 1898 according to the list of Hilma af Klint's literature provided to me by Johan af Klint at the Hilma af Klint Foundation in Stockholm, Sweden.

⁹³ Annie Besant and C.W. Leadbeater, *Thought-Forms* (London: Theosophical Publishing House, 1901). <http://www.gutenberg.org/files/16269/16269-h/16269-h.htm>.

⁹⁴ Annie Besant, *Esoteric Christianity or the Lesser Mysteries* (London: Theosophical Publishing House, 1905). <http://www.gutenberg.org/files/26938/26938-h/26938-h.htm>.

⁹⁵ Rudolf Steiner, *The Way of Initiation or How to Attain Knowledge of the Higher Worlds* (London: Theosophical Society, 1908). <https://babel.hathitrust.org/cgi/pt?id=uva.x000596536;q1=the%20way%20of%20initiation>. Hilma af Klint owned a German copy of this text in her personal library. I obtained a list of all her documented literature from Johan af Klint at the Hilma af Klint Foundation in Stockholm, Sweden. The German copy af Klint owned was donated to Lunds stadsbibliotek in Lund, Sweden. It must be noted that this text was published at the time of the af Klint-Steiner encounter and was the only Steiner text she had in her personal collection from that year. Everything she owned by Steiner was published after the alleged negative encounter, which implies that Steiner was not as influential leading up to 1908. It is known that Steiner, like many other esotericists, at the time influenced af Klint and her works, but Steiner is the only one that comes up in the secondary literature as one of the major influences. Af Klint's library was full of various types of religious and esoteric literature that all would have contributed to her overall spiritual growth.

⁹⁶ Rudolf Steiner, *Christianity as Mystical Fact and The Mysteries of Antiquity* (New York: Knickerbocker Press, 1914). <http://www.gutenberg.org/files/24507/24507-h/24507-h.htm>.

exploratory analysis based on works af Klint owned, was known to have read, or would have likely been familiar with at the time. The goal of this method seeks to identify quantifiable pieces of text using word frequency as a method of examining whether specific authors had more influence over af Klint's visual vocabulary and themes in her early sketches before and after the 1908-1912 moment of crisis. More importantly, can text analysis deepen our understanding of the af Klint-Steiner dilemma?⁹⁷

Text analysis creates the possibility to analyze relational networks on a vast scale. This is important for this project insofar as the method can detect patterns and relationships between af Klint's visual vocabulary and the language within each text being investigated. David Hoover examines the different ways of using textual analysis in his essay "Textual Analysis" in *Literary Studies in the Digital Age: An Evolving Anthology*.⁹⁸ Hoover points out excellent examples of the strengths and kinds of investigations and questions that can be approached through text analysis such as storing, counting, comparing, and statistical analysis. For Hoover, "word lists and concordances are useful exploratory tools."⁹⁹ This tool in particular is important for this

⁹⁷ Further exploration with this method might include: Can corpus work help us understand better af Klint's particular approach to visual art and spirituality through a closer examination of her diaries?

⁹⁸ David Hoover, "Textual Analysis," *Literary Studies in the Digital Age: An Evolving Anthology*. MLA Commons, 2013. doi: <https://dlsanthology.mla.hcommons.org>.

⁹⁹ Ibid.

project since text analysis is dependent on word frequency to help build a network graph.

Af Klint's visual vocabulary during the years I looked at for this study resonate with the topics addressed in the primary texts: science, color theory, and esoteric and occult ideas. Therefore, comparing the different term types I developed in Timeline 3D to word frequency in each text affords the option to consider questions regarding potential relationships between textual content and af Klint's visual vocabulary. In other words, how do these texts help develop a linguistic typology that can be compared to af Klint's visual choices in order to analyze where there may be patterns and overlaps?

In this particular case, I used AntConc's term frequency feature to determine and calculate the weight of each term. The frequency of a word's use is likely to be a good indicator of its importance. Therefore, AntConc was used as an exploratory and intermediary tool to quickly count word frequency, but to also think about what terms might be of more importance to af Klint's visual vocabulary over others. The count of occurrences thus created the link between Timeline 3D and Graph Commons, where the network graphs use the data structure developed from Timeline 3D to explore new questions about the multiple influences on af Klint's works and whether or not Steiner was influential during this particular moment.

3.5 Data Visualization: Graph Commons

3.5.1 Assembling the Network

Network visualization is one digital methodology that can explore connections between af Klint's symbolism between the years 1895 and 1913 to the selected works of Goethe, Darwin, Blavatsky, Besant, and Steiner. Developing a large network required the assistance of Graph Commons, a platform for making, analyzing and publishing network maps. In order to yield the types of results hoped for and introduce new questions of the research, it was helpful to fold the data from earlier digital methods, such as plug the tagging terms from Timeline 3D into AntConc to calculate the frequency of terms within each text. These three seemingly disparate digital methodologies became a cogent multimethodology that allowed for careful re-evaluation of the af Klint-Steiner encounter. The first network included af Klint as the central actor in the diagram. From the af Klint node (individual example), edges were extended to texts written by Goethe, Darwin, Blavatsky, Besant, and Steiner to analyze a potential connection between the artist and the primary documents.

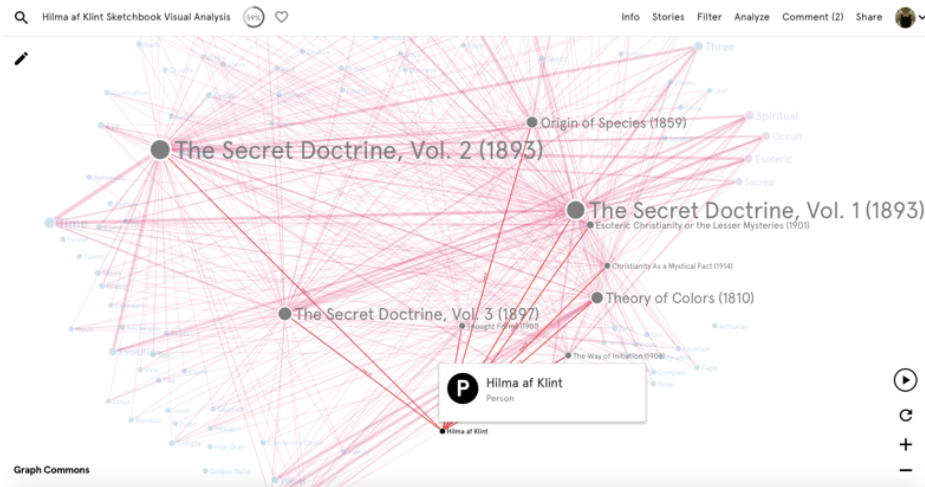


Figure 12: Af Klint connected by edges to primary texts.

All tagging terms from Timeline 3D became nodes in the diagram that connected to primary texts through a weighted edge visually represented by the thickness of the line. The thickness of each line is based on how many times each word showed up in each text. The number of instances of each word in each text was discovered quickly with the assistance of AntConc. AntConc has a corpus search feature that allows users to enter key terms and the concordance tab populates the number of hits. This feature is an efficient way of analyzing texts and how certain words were used. This is precisely why developing a vocabulary based on the symbols and themes in af Klint's early sketchbooks is important, as it nominally creates a relationship between af Klint's visual vocabulary and the language within each text. Basing an analysis and network visualization on terms and themes in her sketchbooks might help us think about af

Klint's work in a new way, such as whether or not Darwin and Goethe were more influential to her practice during this moment rather than Steiner.

Finding relations between discrete textual works to identify and understand potential influence, however, is an exploratory method that examines, in this case, frequency of words visualized in weighted edges within the network. This exploratory process highlights and connects prevalent themes and symbols in af Klint's works to specific texts. One theme that shows up often in af Klint's works is *evolution*. Evolution appears frequently in both af Klint's early works and Blavatsky's text. Another example is the consistent representation of plants. *Plants* is a key term that is obviously weighted heavily in Darwin's text within the network diagram. Not to mention, plants are a common motif in af Klint's sketchbooks from 1895-1913.

Nonetheless, in "Demystifying Networks," Scott Weingart posits that the "edges are a layer of interpretation not intrinsic in the objects themselves."¹⁰⁰ In other words, computational approaches and the edges themselves "come with many theoretical shortcomings for the humanist" and should not be considered replacements to humanistic inquiry, but extensions of research practices.¹⁰¹ On the one hand, diagrammatic forms offer the humanist the capability of linking various types of

¹⁰⁰ Scott, Weingart, "Demystifying Networks," *Scottbot.net*.

¹⁰¹ *Ibid.*

This is an important feature because the method allows for a quick analysis of which nodes are connected the most to primary texts in the network. A cluster analysis of the initial network details the top four clusters: *The Secret Doctrine*, Volumes I and II; *Theory of Colors*; and *Origin of Species*.

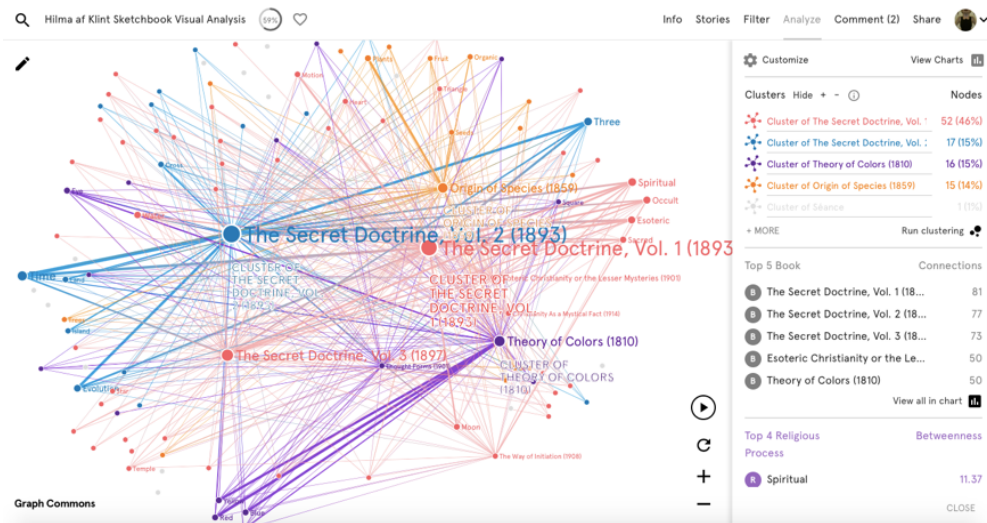


Figure 14: Cluster analysis. Link to interact with network: <https://bit.ly/2yoEYCp>.

Based on the terms developed from the analysis of af Klint's early sketchbooks in tandem with the primary texts included in the network graphs reveal very little connection with the works in question to the two Steiner texts. In fact, the most prominent connections link af Klint more closely to Goethe, Blavatsky, and Darwin. More importantly, the edges that carry the heaviest weights in the network connect these specific texts to the key terms: time, evolution, spiritual, esoteric, occult, sacred, eye, yellow, red, blue, green, and plants. All of these themes and symbols appear not

only in the early works analyzed for this study, but also throughout the remainder of her life as a practicing artist.

This suggests the possibility that early works were not only influenced by the spirits as af Klint claimed, but perhaps also the works of Goethe, Blavatsky, and Darwin over Steiner. The cluster analysis groups a set of objects based, in a sense, to other groups that are similar and thus suggests that Steiner's writings did not explicitly influence the visual vocabulary of af Klint's early works. For example, there is a very strong connection between the terms yellow, red, blue, and green in Goethe's text that might yield interesting results through a closer examination of his theory related to those colors and af Klint's use of blue for female, yellow for male, and green that symbolizes the consummation of the two on the astral plane.¹⁰²

Although the cluster analysis is compelling, network visualizations are not without problems. Most famously for our topic, in 2013, MoMA's exhibition *Inventing Abstraction, 1910-1925: How a Radical Idea Changed Modern Art*, like Barr's 1936 exhibition, introduced a new contemporary network diagram understood to reveal connections between the origins and influences of modern art.¹⁰³ Af Klint was not included in this

¹⁰² See Tsvetan Todorov, *Theories of the Symbol* (Ithaca: Cornell University Press, 1984). Todorov's text presents a history of semiotics and examines the rich tradition of sign theory. Goethe is one of many writers he discusses in his book.

diagram nor the exhibition. This demonstrates that despite the resurgence of interest in af Klint's works that she was still omitted from the larger and more accepted public narrative of the history of modern art. Art historian Vicenç Furió approaches the problems with MoMA's network and the exclusion of af Klint from a sociological perspective in "Fame and Prestige: Necessary and Decisive Accomplices in the Case of Hilma af Klint" (2013).¹⁰⁴ Furió considers two types of contacts in the case of af Klint: networks of personal contacts and institutional contacts (museums). Much like Fant's essay in the *Spiritual* exhibition catalogue, MoMA "preserves Kandinsky's well-established position" and neither includes af Klint in the network diagram or in the exhibition catalogue despite af Klint's recognition as a "pioneer of the abstract" in another exhibition on display at the same moment titled *Hilma af Klint: A Pioneer of Abstraction* held at Stockholm's Moderna Museet.¹⁰⁵

MoMA's diagram is an example of a network that exists outside of exploratory or experimental digital methodology that reveals its processes and assumptions.¹⁰⁶ On the one hand, the diagram seeks to connect artists and intellectuals that are not known to

¹⁰³ Leah Dickerman, *Inventing Abstraction 1910-1925: How a Radical Idea Changed Modern Art*, exh. cat (New York: Museum of Modern Art, 2012).

¹⁰⁴ Vicenç Furió, "Fame Prestige: Necessary and Decisive Accomplices in the Case of Hilma af Klint," *Espacio, Tiemp y Forma: Historia del Arte, Serie VII; Madrid 1* (2013).

¹⁰⁵ Ibid.

¹⁰⁶ Link to MoMA's network diagram:
<https://www.moma.org/interactives/exhibitions/2012/inventingabstraction/?page=connections>.

have had explicit connections with one another. On the other hand, the network diagram limits its connections to the individuals represented in the exhibition and thus omits other important key figures in the development of abstraction. Although the visualizations created for this study are exploratory, my initial hypothesis has revealed interesting insight and new questions about af Klint, her relationship to Steiner, and how we still need a clearer picture of her in art history. For this reason, smaller thematic diagrams enable excellent examples of the kinds of investigations and art historical questions that can be approached through network visualization, in addition to introducing more comprehensive examples of networks that are accessible and clearer to a general audience.

3.5.3 Thematic Diagrams

The larger dense network can be visualized in various configurations. This allows for a more qualitative approach to the data provided the larger network is broken down into smaller thematic diagrams where the connection to primary texts and frequency of terms can be examined more closely. We have seen from a cluster analysis of the larger network that af Klint may have been influenced by Goethe, Darwin, and Blavatsky during her early work with De Fem, and saw little connection to the work of Steiner based on this method. However, outside of the results of cluster analysis, the

larger network doesn't provide a cogent narrative and thus required smaller thematic diagrams in order to yield more explicit connections.

Ten thematic diagrams were developed based on classifying term types from the initial network: Religious Objects, Action & Symbol, Architecture, Fruit, Science, Water & Land, Color, Plants, Geometry, and Remaining Terms that did not necessarily fall within the typology of the other nine. The smaller thematic diagrams narrowed down prominent themes and symbols based on my typological and visual analysis of early sketches that took precedence in each primary text.¹⁰⁷ In order to cancel out terms that only appeared a few times in each text and narrow the scope further, only the terms mentioned 50+ times were included in the smaller visualizations. From the ten thematic diagrams, a controlled vocabulary was developed based on the thickest edge weight and its connection to primary texts in the network: time, heart, cross, motion, temple, fruit, organic, evolution, star, water, land, island, red, green, yellow, blue, trees, flowers, plants, seeds, lotus, triangle, and eye. These particular terms are interesting because they

¹⁰⁷ See also Heinrich Wölfflin, *Principles of Art History: The Problem of the Development of Style in Later Art* (New York: Dover, 1950). Wölfflin sought to distinguish the development in style over time. As such, he surveyed the works of 64 artists in terms of style, quality, and representation.

are some of the most important visual symbols in af Klint's early works up until 1913, and some often appear in her later large-scale paintings.

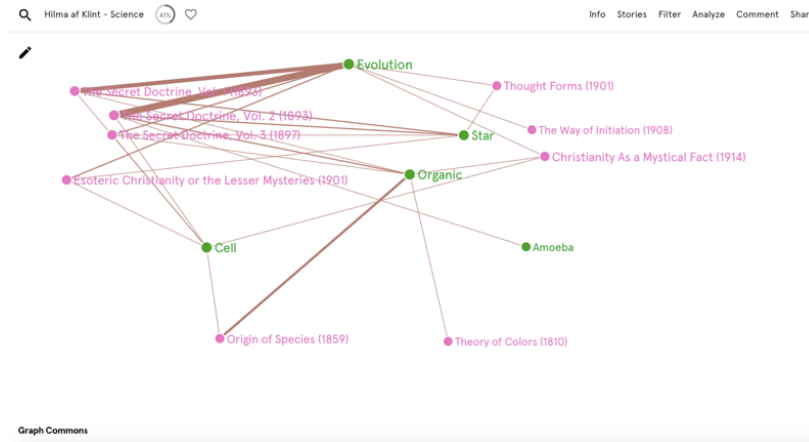


Figure 15: *Evolution* prominent in *The Secret Doctrine* and *Organic* prominent in *Origin of Species*. Link to interact with network: <https://bit.ly/2C8IOTw>.

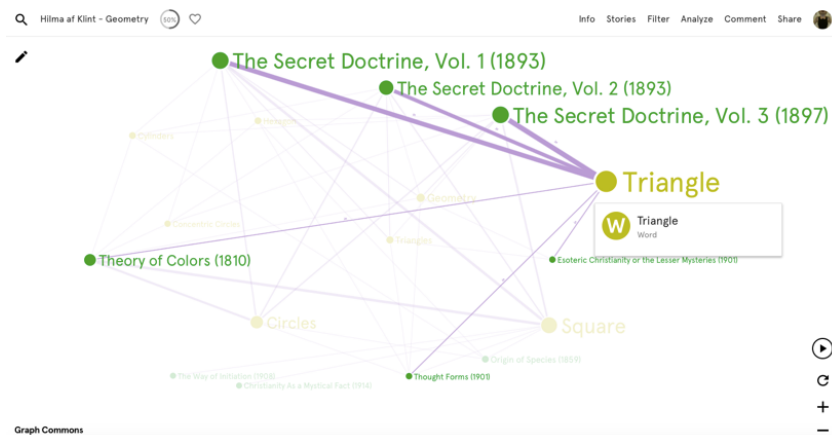


Figure 16: *Triangle* most prominent in *The Secret Doctrine*. Link to interact with network: <https://bit.ly/2Cyr84K>.

Additionally, some of these terms resurface again and again in secondary literature on the spiritual dynamic in modern art. Even more interesting is the fact that these terms rarely appear in the Steiner texts suggesting that perhaps he was not as influential as the secondary scholarship advocates. Actually, out of 100 nodes in the initial network, only 28 terms linked to Steiner's *The Way of Initiation* (1908), where the heaviest weights connected to only the terms "occult" and "spiritual." Af Klint's interest in his literature perhaps became more influential in her later works.

The smaller thematic diagrams propose that an explicit connection to the works of Steiner is much less evident than scholarship assumes. The results, however, must be approached critically, as network visualizations often look interesting but at times provide less specific results. In contrast, network visualizations in the case of this study, provide new perspectives on the early works of af Klint and her relationship to Steiner, "in which intuition can still play a role."¹⁰⁸ These tools generate questions and new insight into the af Klint-Steiner connection.

Stéfan Sinclair and Geoffrey Rockwell address this in "Text Analysis and Visualization: Making Meaning Count."¹⁰⁹ They argue that "digital text is conducive to

¹⁰⁸ Moretti, *Distant Reading*, 215.

¹⁰⁹ Stéfan Sinclair and Geoffrey Rockwell, "Text Analysis and Visualization: Making Meaning Count," in *A New Companion to Digital Humanities* (New Jersey: John Wiley & Sons, Ltd., 2016).

manipulation...it invites us to experiment with its form in applied ways that print texts cannot support."¹¹⁰ This is precisely what the terms developed from visual analysis in tandem with primary texts afford. Digital methods enable linguistic exploration and the opportunity to develop a wealth of representations that do not always lead to hard evidence, but undoubtedly always lead to new questions. More importantly, representations sometimes provide provocative, if not coincidental, visualizations, such as the results of this study, that *do* tell scholars something about their specific research question(s).¹¹¹ In this case, the thematic diagrams not only show there is very little connection between af Klint's visual vocabulary to the works of Steiner during the years in question, but also provide new methods of inquiry that might assist in a total re-evaluation of af Klint's life and works.

¹¹⁰ Ibid., 279.

¹¹¹ Johanna Drucker's essay "Graphical Approaches to the Digital Humanities" in *A New Companion to Digital Humanities* states, "Info visualization...should always be accompanied by a warning to be wary of reading the artifactual features of the graphic as if they are an unmediated presentation of underlying info," 239.

4. Conclusion

If the focus of art history is aimed at situating af Klint in an organized triad where she's positioned in the shadow of Kandinsky and under the influence of Steiner, how much about her life, as scholars, have we missed? And how can the focal point of af Klint's artistic oeuvre most prominently exist within the framework of *abstraction* knowing an incredible body of work both academic and automatic existed before her large-scale paintings were ever produced? Certainly, the early years contribute to her growth and development as an artist. Therefore, it is imperative that her entire life's work be re-evaluated with attention to new approaches and sources.

The mixed methods employed in this study, although focused on a specific biographical dilemma, act as springboards for further inquiry into the complex life of af Klint and begin to analyze the problematics around her disjunctive biography in art history. Traditional historical methods prove that secondary scholarship often omits important archival research and visual analysis. Subsequently, this is a large part of why af Klint continues to be misrepresented and misunderstood in the moment of her creation.

Furthermore, historical methods and close reading in this study allowed for the opportunity to locate a biographical discrepancy, trace the discrepancy back to its origin, and determine that the af Klint-Steiner encounter can only be understood as speculative

even though it has appeared in literature as an art historical *fact*. Additionally, historical methods continue to position af Klint in the shadow of Kandinsky by paying particular attention to her large-scale paintings produced when af Klint was in her mid-forties all while knowing she had also been a commercially successful portraitist and landscape painter and produced 100s of drawing with De Fem before she began to produce the paintings she is famously known for today.

Digital methodologies are one way to analyze and re-evaluate af Klint's life's works and biography. The digital methodologies employed in this study, for instance, functioned in three distinct ways: organization, experimentation, and to further analyze the af Klint-Steiner encounter. Organizing early sketches with De Fem allows for the opportunity to examine multiple images with similar themes and symbols across time showing that the iconography present in the drawings stayed consistent between 1886-1913. This is significant, as it's the time period before and after the alleged Steiner encounter suggesting that he had no explicit influence on the visual vocabulary of af Klint's works during the years in question. In contrast, the network diagrams link af Klint to important primary texts that visualize the lack of connection to Steiner. These methods reveal the power and importance of archival research in tandem with primary documents as a means of better understanding the life of af Klint.

More importantly, the iconography present in the early sketches evolve from loose, automatic drawings rife with abstracted representations of shapes, figures, and plants, to name a few, to more detailed, colorful, and mimetic examples of the same subjects. This is particularly interesting considering the art museum's attention to exhibiting af Klint's spiritual paintings between 1906-1920 as her breakthrough years where she continued to push her newly discovered visual vocabulary. From an examination of 270 of her early sketches with De Fem, it can be contended that the visual vocabulary prevalent in her later paintings had perhaps been discovered at least a decade prior to 1906. This introduces an entirely new set of questions about the séance group, as the members took turns drawing during the sessions and what types of questions we can ask of these archival materials as scholars and research practitioners? More importantly, can the early drawings provide us with more insight into the life of af Klint?

Analyzing and comparing a controlled vocabulary in smaller thematic networks based on the iconography present in af Klint's early sketches to primary texts did not necessarily provide irrefutable conclusions of my hypothesis. Nonetheless, the models interrogate the af Klint-Steiner encounter insofar as they suggest the influence of other figures such as Goethe, Darwin, and Blavatsky over the works of Steiner during this particular moment. The real question is how do we as art historians use digital methods

effectively and efficiently, as exploratory models often times do not reveal insightful results, but rather introduce more questions. Further text analysis, text mining, and network visualization using af Klint's digitized sketchbooks and diaries in tandem with some of the primary texts we know she owned might make for a provocative study that may provide a new understanding of her life and visual art.

The methods and scope of this study have provided meaningful results regarding af Klint and her connection to Steiner in 1908. Furthermore, these methods have clearly demonstrated that the art world's understanding of af Klint is in need of reform. The multidimensional and complex spiritual and professional life of af Klint should not suffer a fate that demands association with Kandinsky and Steiner or a particular artistic style in order to receive canonization for her contributions to modernism's cultural history and art. Boundaries such as this position af Klint precariously between the male hierarchy of the avant-garde and the visual appearance of one facet of her total body of work as a way of validating her inclusion in the canon.

The time has come to acknowledge af Klint as an artistic and spiritual polymath who worked on her own terms in a variety of media throughout her life. The best way to accomplish this goal is through close examination of archival materials available at the Hilma af Klint Foundation in Stockholm, Sweden and the Rudolf Steiner archives in Dornach, Switzerland, in addition to careful visual analysis and mixed methods

including the digital of her total body of work. The nature of af Klint's spiritual practice helps tell us only part of the story of her life. The way in which she developed her visual vocabulary from the beginning and how we evaluate the images and primary documents associated with her life is how, as scholars, we can begin to understand af Klint as a truly remarkable woman unlike any other artist of her time. Developing an image repository including all of af Klint's works and diaries can help scholars analyze af Klint's total oeuvre across time affording both the opportunity to mine her diaries and closely examine her symbology and subsequent development as an artist.

Appendix A

1. Compass
2. Urn
3. Fountain
4. Bird
5. Eagle
6. Arthurian
7. Prism
8. Dove
9. Wings
10. Rings
11. Moon
12. Scissors
13. Pyramid
14. Red
15. Blue
16. Golden Ratio
17. Yellow
18. Green
19. Infinity
20. Mandala
21. Concentric Circles
22. Holy Grail
23. Hexagon
24. Geometry
25. Scroll
26. Temple
27. Pulpit
28. Lotus
29. Music
30. Evolution
31. Star
32. Flag
33. Vine
34. Castle
35. Time
36. Island

- 37. Land
- 38. Séance
- 39. Automatic
- 40. Rectangles
- 41. Sky
- 42. Trees
- 43. Steps
- 44. Radiate
- 45. Eye
- 46. Layers
- 47. Boats
- 48. Hierarchy
- 49. Floating
- 50. Pedestal
- 51. Cell
- 52. Organic
- 53. Pistil
- 54. Door
- 55. Helmet
- 56. Void
- 57. Motion
- 58. Chalice
- 59. Funnel
- 60. Three
- 61. Apple
- 62. Vibration
- 63. Square
- 64. Flowers
- 65. Flora
- 66. Hearts
- 67. Amoeba
- 68. Circles
- 69. Spiral
- 70. Hourglass
- 71. Tunnel
- 72. Triangles
- 73. Triangle
- 74. Seeds

- 75. Doorway
- 76. Stripes
- 77. Ladder
- 78. Anchor
- 79. Cross
- 80. Leaf
- 81. Vessel
- 82. Crucifix
- 83. Stairs
- 84. Crowns
- 85. Crown
- 86. Arches
- 87. Illumination
- 88. Plants
- 89. Ship
- 90. Boat
- 91. Water
- 92. Levels
- 93. Ascend
- 94. Leaves
- 95. Heart
- 96. Fruit
- 97. Cherry
- 98. Arch
- 99. Roots
- 100. Cylinders

Appendix B

MOVEMENT	ARTIST	SEX	COUNTRY	BIRTH PLACE	BIRTH YEAR	DEATH YEAR	TITLE
SYMBOLISM	JEAN DEVILLE	M	Belgium	Belgium	1867	1953	Mysteries (Portrait of Mrs. Stuart Merrill)
SYMBOLISM	MAURICE DENIS	M	France	France	1870	1943	Orange Christ
SYMBOLISM	MAURICE DENIS	M	France	France	1870	1943	The Mass
SYMBOLISM	MAURICE DENIS	M	France	France	1870	1943	Offering of Calvary
SYMBOLISM	CHARLES FLUGER	M	France	France	1863	1928	Chromatic Notations
SYMBOLISM	CHARLES FLUGER	M	France	France	1863	1928	Head of a Lion
SYMBOLISM	CHARLES FLUGER	M	France	France	1863	1928	Geometric Figure
SYMBOLISM	PAUL GAUGUIN	M	France	France	1848	1903	The Breton Calvary; The Green Christ
SYMBOLISM	PAUL GAUGUIN	M	France	France	1848	1903	The Universe Is Created
SYMBOLISM	FERDINAND HODLER	M	Switzerland	Switzerland	1853	1918	The Dream
SYMBOLISM	FERDINAND HODLER	M	Switzerland	Switzerland	1853	1918	Sunset on Lake Geneva
SYMBOLISM	VICTOR HUGO	M	France	France	1802	1885	Planet-spots
SYMBOLISM	FERDINAND KHNOFF	M	Belgium	Belgium	1858	1921	A Dreamer
SYMBOLISM	FERDINAND KHNOFF	M	Belgium	Belgium	1858	1921	Study for "The Incense"
SYMBOLISM	EDVARD MUNCH	M	Norway	Norway	1863	1944	The Sun
SYMBOLISM	EDVARD MUNCH	M	Norway	Norway	1863	1944	Metabolism
SYMBOLISM	EDVARD MUNCH	M	Norway	Norway	1863	1945	The Sun II
SYMBOLISM	PAUL RANSON	M	France	France	1864	1909	Nabi Landscape
SYMBOLISM	PAUL RANSON	M	France	France	1864	1910	Christ and Buddha
SYMBOLISM	ODILON REDON	M	France	France	1840	1916	N'y a-t'il pas un monde invisible
SYMBOLISM	ODILON REDON	M	France	France	1840	1917	The Buddha
SYMBOLISM	ODILON REDON	M	France	France	1840	1918	The Spheres
SYMBOLISM	ALBERT PINCKHAM RYDER	M	United States	United States	1847	1917	Moonlight Cove
SYMBOLISM	PAUL SÉRUSIER	M	France	France	1864	1927	The Gold Cylinder
SYMBOLISM	PAUL SÉRUSIER	M	France	France	1864	1927	Tetrahedrons
SYMBOLISM	JOHAN THORN PRIKKER	M	Netherlands	Netherlands	1868	1932	The Bride of Christ
SYMBOLISM	JOHAN THORN PRIKKER	M	Netherlands	Netherlands	1868	1932	The Epic Monk
SYMBOLISM	JAN TOOROP	M	Netherlands	Java	1858	1928	Organ Sounds
SYMBOLISM	JAN TOOROP	M	Netherlands	Java	1858	1928	Ascendancy with Opposition of Modern Art
SYMBOLISM	JAN TOOROP	M	Netherlands	Java	1858	1930	Song of the Times
SYMBOLISM	JAN TOOROP	M	Netherlands	Java	1858	1931	The Three Brides
THE GENERATION OF THE ABSTRACT PIONEERS IN EUROPE	JEAN ARP	M	France	Germany	1886	1966	Pre-Dada Drawing

Figure 17: *Spiritual in Art* partial dataset.

MOVEMENT	ARTIST	SEX	COUNTRY	BIRTH PLACE	BIRTH YEAR	DEATH YEAR	TITLE	YEAR	YEAR END	AFTER YEAR	CIRCA YEAR	MEDIAU
	Adel Abdessemed	M					Also sprach Allah (Ainsi parlait Allah)	2007				Video, o
	Adel Abdessemed	M					God is Design (Dieu est forme)	2005				Film d'ar
	Marina Abramović	F					Thomas Lips	1975	2005			Installat
	Isaac Abrams	M					All Things Are One Thing	1967				Huile sur
	Vyacheslav Akhunov	M					Plying Leap	1967				Huile sur
	Jean-Michel Alberola	M					Ascent (Ascension)	2004				Video D
	Jean-Michel Alberola	M					L'esperance a un fil, l'esperance a un fil	2006	2007			Neon bis
	Kenneth Anger	M					La sortie est à l'intérieur	2008				Peinture
	Anonyme						Lucifer Rising (Ascension de Lucifer)	1973				Film cine
	Anonyme						Coiffe hapi pour la Danse du papillon	n.d.				
	Anonyme						Ménades dansant	n.d.				
	Anonyme						Poupée kachina hapi saviki (Kachina au serpent)					Bois, exo
	Jean Arp	M					Der Hirsch (Le Cerf)					Marbre
	Antonin Artaud	M					Le Médiateur sexuelle de dinu					Bois, pol
	Antonin Artaud	M					Pour en finir avec le jugement de dieu	1946				Relief en
	Francis Bacon	M					Head I	1947				Crayon,
	Francis Bacon	M					Untitled (Crouching Nude)	1948				Emission
	Léon Bakst	M					Buchonte	1911				Photogr
	Léon Bakst	M					Dessin du costume pour Vaslav Nijinski dans L'Après-midi d'un faune	1912				1950
	Vladimir Baranoff-Rossiné	M					Adam et Eve à la fleur	1910				Crayon,
	Max Beckmann	M					Die Granate, 1. degree Zustand	1916				Lithogra
	Max Beckmann	M					Die Granate, 2. degree Zustand	1916				Huile sur
	Max Beckmann	M					Die Granate, 3. degree Zustand	1915				Pointe si
	André Bély	M					Méditationsszeichnung, Ardeheine aus dem Kanvolut Angelai (Geister der Form)	1913				Pointe si
	André Bély	M					Méditationsszeichnung aus dem Kanvolut Archai (Geister des Willens)	1913				Gouache
	André Bély	M					Méditationsszeichnung (Wirbel), aus dem Kanvolut Angelai (Geister der Bewegung)	1913				Aquarell
	Wallace Berman	M					Sans titre	1956	1957			Gouache
	Wallace Berman	M					Sans titre	1959				Encre su
	Wallace Berman	M					Sans titre	1967				Tirage g
	Wallace Berman	M					Untitled (Large Rock 90.1.5)	1973				Verifax c
	Wallace Berman, Jay DeFeo	M/F					Sans titre	1959				Roche,
	Auguste Bert						Prelude à L'Après-midi d'un faune	1912				Tirage g
	Joseph Beuys	M					I Like America and America Likes Me (J'aime l'Amérique et l'Amérique m'aime)	1974				Video U-
	Joseph Beuys	M					Sonnenkreuz (Cruz solare)	1947	1948			Brancie,
	Joseph Beuys	M					Symbol der Erlösung II, Symbol der Auferstehung	1948	1949			Chêne, s

Figure 18: *Traces du sacré* partial dataset.

ExhibitionHistory_HilmaafKlint							
Beginning Month	Beginning Day	Beginning Year	End Month	End Day	End Year	Exhibition Type	Title
October	12	2018	January	27	2019	Solo	<i>Hilma af Klint</i>
March	3	2018	July	16	2018	Solo	<i>Hilma af Klint – Mundos Possíveis</i>
November	6	2018	March	10	2019	Group	<i>World Receivers: Georgiana Houghton–Hilma af Klint–Emma Kuus</i>
March	3	2016	May	15	2016	Solo	<i>Hilma af Klint: Painting the Unseen</i>
March	19	2016	May	29	2016	Solo	<i>Ann Edholm möter Hilma af Klint (Ann Edholm meets Hilma af Klint)</i>
October	2	2015	January	3	2016	Solo	<i>Hilma af Klint – A Pioneer of Abstraction</i>
March	13	2015	June	7	2015	Solo	<i>Hilma af Klint – A Pioneer of Abstraction</i>
March	7	2014	July	6	2014	Solo	<i>Hilma af Klint – abstrakt pioner (Hilma af Klint – A Pioneer of Abstraction)</i>
August	16	2014	September	28	2014	Solo	<i>Hilma af Klint – abstrakt pioner (Hilma af Klint – A Pioneer of Abstraction)</i>
February	26	2014	May	11	2014	Solo	<i>Feel the Spirit</i>
February	16	2013	May	26	2013	Solo	<i>Hilma af Klint – abstrakt pionär (Hilma af Klint – A Pioneer of Abstraction)</i>
October	21	2013	February	9	2014	Solo	<i>Hilma af Klint – A Pioneer of Abstraction</i>
June	15	2013	October	6	2013	Solo	<i>Hilma af Klint – A Pioneer of Abstraction</i>
August	30	2012	October	28	2012	Solo	<i>Hilma af Klint / Eva Lange</i>
October	1	2011	January	8	2012	Solo	<i>Kallebar – Hilma af Klint & Adam Fuss (Vocations – Hilma af Klint & Adam Fuss)</i>
May	15	2011	October	2	2011	Solo	<i>See Colour!</i>
March	7	2010	May	30	2010	Solo	<i>The Secret Paintings of Hilma af Klint</i>
September	27	2009	November	15	2009	Solo	<i>Cecilia Edelvik & Hilma af Klint</i>
April	11	2008	July	27	2008	Solo	<i>Hilma af Klint – Une modernité rélévée</i>
February	17	2006	April	16	2006	Solo	<i>An Atom in the Universe</i>
November	3	2005	April	23	2006	Solo	<i>Hilma af Klint</i>
December	10	2004	February	17	2005	Solo	<i>The Paradise</i>
June	6	2004	October	17	2004	Solo	<i>Geometri och andlighet (Geometry and Spirituality)</i>
October	30	1999	January	9	2000	Solo	<i>Målningsarna till Templet (The Paintings for the Temple)</i>
January	26	2000	March	26	2000	Solo	<i>Wäinö Aaltonen Museum</i>
April	4	1998	May	30	1998	Solo	<i>Hilma af Klint</i>
October	18	1998	November	15	1998	Solo	<i>Hilma af Klint</i>
January	16	1999	February	20	1999	Solo	<i>Hilma af Klint</i>
November	28	1991	February	2	1992	Solo	<i>Okkultismus und Abstraktion Die Malerin Hilma af Klint (Occultism and Abstraction of the Painter Hilma af Klint)</i>
February	22	1992	March	29	1992	Solo	<i>Okkultismus und Abstraktion Die Malerin Hilma af Klint (Occultism and Abstraction of the Painter Hilma af Klint)</i>
April	30	1992	July	19	1992	Solo	<i>Okkultismus und Abstraktion Die Malerin Hilma af Klint (Occultism and Abstraction of the Painter Hilma af Klint)</i>
December	26	1989	February	18	1990	Solo	<i>Okcult målarinna och abstrakt pionär (Occult Painter and Abstract Pioneer)</i>

Figure 19: Hilma af Klint exhibition history partial dataset.

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