

Elastic Architecture:

Frederick Kiesler in the Age of Robotic Culture

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Preface and Acknowledgments

The age of mankind is over. A new world
has begun! The rule of Robots!

--Karl Capek

In 1920, the Czech playwright, Karel Capek coined the term 'robot' for his play R.U.R. (Rossum's Universal Robots), crediting his brother Josef for inventing the term. Austrian architect Frederick Kiesler, working with Capek in 1922, designed the sets for the R.U.R., and their work together announced a turning point in cultural history. Robots became the official symbol of the human body incorporated within the surrounding technological environment establishing common ground between humanity and the new world of machines. Both exciting and disconcerting, the idea of androids or living machines reflected society's obsession with modern industry and technology's impact on everyday human life.

A preoccupation of the human imagination since antiquity, the concept of living machines reached a new level of interest in the early twentieth century. Leonardo da Vinci's first humanoid plans (1495) to Jacques de Vaucanson's invention of his famous automata—the duck, flute player, and pipe player in (1738-1739)—revealed humanity's ambivalence about automated technology. Was it possible that one day machines might become living things? What would that mean for the future of humankind? (a quote or two from one of these stories might be good to illustrate the different ways people talking about this) E.T.A. Hoffman's classic *The Sandman*, Mary Shelly's *Frankenstein*, and Auguste Villiers de l'Isle-Adam's *The Future Eve*, reflected the chilling discomfort people felt despite society's unbridled enthusiasm for conflating humanity with machines. These stories, among many others, foretold Capek's humorously intended realization that robots would inevitably supplant human life and indeed take over the world!

Whether or not humans were really becoming machines, or machines becoming humans, or some hybrid thereof, was obviously the point of Capek's fantastical story. What mattered

important is that the play itself offered an opportunity to work through and question human fears and fantasies about robots. It provided future vision. Creating fictional spaces of experimental fantasy in art, theater, and literature, can provide opportunities to imagine future worlds.

Although typically not the role of the architect (in 19---), upon meeting Capek, Kiesler spent the rest of his life attempting to reconcile the fears and ideals of robotic culture through diverse forms of creative research that opened new paths for architects. Effectively merging the field of architecture with that of science fiction, Kiesler dedicated his practice to advancing new forms of speculative design research, which imagined new spaces to engage, create, and form visionary tales of futuristic fantasy that aimed to motivate and enliven the building profession. Kiesler was a visionary not only for the ideas he investigated and the forms he produced, but the means and methods he utilized to realize his innovative and dramatic design ambitions.

The Czech word *robot* means ‘heavy labor’, and frankly, I had no idea when I began researching and writing about Kiesler’s work, , I would devote a decade of my life to studying modern theories of automatism, automation, and human habitation, let alone perhaps the most creative, visionary--if eccentric—architect, the twentieth century had ever seen., I credit my advisor Beatriz Colomina, and sincerely thank her for introducing Kiesler to the Princeton School of Architecture, where I completed my dissertation, as well as Hal Foster, for first suggesting I pursue the study of Kiesler’s work. Additionally, I am grateful to my committee members—Stan Allen, Michael Jennings, Spyros Papapetros and Mark Wigley for providing invaluable readership and support throughout this journey. Professors Giorgio Agamben, Christine Boyer, Rodolphe el-Kuory, Mario Gandelsonas, Mark Hansen, Thomas Levin, Anson Rabinbach, John Rajchman, and Georges Teyssot all provided guidance and reassurance while at Princeton. Whereas Felicity Scott, Branden Joseph, Kathleene James, Sarah Whiting, David Cunningham, Greg Crysler, Joan Ockman, Antoine Picon, Mohsen Mostafavi, Ben van Berkel, Caroline Bos, Sanford Kwinter, Elizabeth Grosz, Dora Jones, David Rifkind, Harrison Fraker, Tom Gunning, Sarah Hamil, [add in Getty and Smithsonian] David Erdman, Marcelo Spina, Thom Mayne, John Enright, Hernan Diaz Alonso, and Tom Wiscombe—all offered valuable insight and shared in discussions that have proven particularly helpful to my work as it developed. Fellow Princeton PhD students who have

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Finally, in addition to the Austrian Frederick and Lillian Kiesler Private Foundation in Vienna, the staff of numerous archives, museums, and libraries have assisted this research, including: the Archives of American Art, Smithsonian Institution, at Washington, D.C, San Marino, and New York; the Harvard University Theater Collection; the Mellon Research Collection, Philadelphia Museum of Modern Art; The Getty Research Library, Special Collections; Yale University Beineke Rare Book and Manuscript Library; Columbia University, Avery Architectural Drawings and Columbian Archives; the Modern Museum of Art, New York; and the Little Review Records, University Manuscripts Collection, University of Wisconsin-Milwaukee. Most significantly, I thank my family for their kindness, love, and incredible endurance, and particularly my daughter Elysia for adding so much happiness to my life; for it is ultimately these affections that keep us from feeling like lifeless working drones—or should I dare say, robots.

Design Research: The Non-Building Architect

Frederick Kiesler's career spans the entire history of modern architecture....he is the greatest non-building architect of our time.

Philip Johnson

In 1960, in *Art in America* magazine Philip Johnson, Chairman of the Department of Architecture for the Museum of Modern Art (MoMA), introduced three great emerging architects—Paul Rudolph, Louis Kahn, and Frederick Kiesler. Rudolph and Kahn were already in the midst of constructing great buildings that would soon make them world-famous—Kiesler, on the other hand, had yet to complete a single freestanding building, despite his extensive career in architecture since the 1920s. Kiesler was included, according to Johnson, because he was a visionary whose ideas, if difficult to construct, were enormous and profound.¹ Johnson considered Kiesler's Endless House, for example, to be one of the most original spatial conceptions of modern times. [Fig. 0.1] For Johnson, an architect's career was not to be valued solely on the success of his built work alone, but on the impact and magnitude of his conceptual innovation within the field. (I know these are "sexist" pronouns, but I don't think it matters here)

Fundamentally challenging what it meant to be an architect, Johnson glamorized Kiesler for not compromising his design ideals to meet the normative demands of the construction industry. Instead, Kiesler set a new trajectory for architects to establish careers not as master builders *per se*, but as research practitioners, who used alternative means and methods to advance architectural ideas outside accepted traditions. In utilizing an extraordinarily diverse quantity of media—furniture, stage, film, sculpture, exhibition, building, drawing, and writing to pursue new ideas—Kiesler developed a complex and synthetic design practice that radically transformed disciplinary boundaries between art, architecture, theater, philosophy, and science in the mid-twentieth-century. His innovative model for experimental design research has since proven inspirational for generations of architects.

This book presents the story of Kiesler's pioneering design ideas and visionary research that formatively challenged the architecture profession to invent new building practices.

Research Background

Spanning the entire history of modern architecture from his early associations with avant-garde groups throughout Europe, to his award-winning successes in the 1960s, Kiesler the research practitioner began as a stage designer, exhibition coordinator, and theater architect in Berlin, Vienna, and Paris during the 1920s. Receiving critical acclaim for his stage designs within avant-garde circles, he became very close to members of the Dada and De Stijl movements. Moving to New York in 1926, he established himself as a prominent stage designer and educator—co-founding the Brooklyn Theater Institute, and working as a manager and scenic director at the Juilliard School of Music from 1934 to 1957. His notable success in theater, advertising display, furniture, and exhibition design in New York City led to his position as a Visiting Professor of Architecture at Columbia and Yale Universities, between 1936 and 1952 where he was able to create one of the first design research laboratories committed to the exploration of the arts and sciences in architecture. Combining ideas from the fields of morphology, biology, psychology, and aesthetics and applying them to the design and construction of new spatial building practices, Kiesler invented a unique body of work as a celebrated designer of Surrealist exhibition, housing, and theater architect.

With his diverse and alternative approach to design research and its education, Kiesler contributed to what architectural critic Douglas Haskall writing in the 1950s, described as a “second ‘modern’ order,” one that opposed normative modern panel and frame rectilinear glass and steel construction in favor of advanced technologies that might achieve continuous and more naturalized organic building structures. Kiesler invented new ways to modulate the built environment in response to multiple spatial habits of perceiving bodies in motion as situated in and evolving through time. His architectural projects were designed to be “elastic”—mobile and flexible—expanding and contracting to perform multiple dwelling tasks. One of a small number of counter-figures in architecture during the twentieth-century, Kiesler’s innovative approach to design established themes and strategies fundamentally different from those proposed by the major protagonists of modern design.

In his lifetime however, Kiesler remained on the periphery of the profession largely because of the challenging ideas he envisioned and the alternative forms he created. Often associated with a counter-modernist movement, for the irrational shapes he employed in his design, Kiesler became best known for

his “Endless” spatial concept—whose importance according to Johnson, lay “in the original conception of folding spaces around the viewer.”² The Endless embodied a new spatial form that challenged modern perceptions and if built, as Johnson believed, “the continuous space moving in complex ways would open vistas unknown to the architects.”³ Envisioning the viewer enveloped within a continuous and dynamically flowing spatial environment, Kiesler invented designs that could expand and contract in accord with the mechanics and perceptions of the human body. His interest in the Endless spanned his entire career from his earliest explorations of his Endless Theater in the 1920s to his Endless House and Universal Theater projects of the 1960s.⁴

Theater and the stage framed the trajectory of his life’s work, which informed his research in the design and construction of new and advanced adaptable building structures. Aiming to construct what he described as “elastic” architecture, Kiesler endeavored to create more socially conscious and economically viable building environments that would ensure the ease and fluidity of human interactions within their evolving technological surroundings. He proposed to design stage settings and buildings with a similar elasticity to the human body, in the hope to synthesize humanity, technology, and machines within one continuously adaptable and sustainable organic architectural environment. [Fig. 0.2]

Elasticity served as the central metaphor for his work, as it guided his practice beyond the limited scope of fixed static structures toward the invention of more flexible topological conditions. Extending his theories on expandable stage environments to the construction of his housing and museum designs, among other building typologies, elasticity remained an essential trope throughout Kiesler’s work and is the guiding theme for this book.

Deriving his environmental design theories surrounding ‘elasticity’ from ideas embedded in the history and theory of modern drama and theater performance—Kiesler invented a unique architectural language that he studied and developed for over forty years. Kiesler aimed to facilitate multiple scenic actions, geared to the changing speeds of modern industry. He constructed staging devices that, unlike the static painted backdrops of nineteenth-century theater, might best respond to the dynamism of the modern machine age with its actorless stages for marionettes and futuristic robots.

Kiesler became part of a revolution occurring in stage design associated with the Constructivists and Futurists that embraced the promise of science, media, and new technology to develop new

theatrical forms that might best train modern audiences to adapt to an evolving industrial society and world culture. Machines had become part of everyday human experience, and Kiesler's theater designs posed to habituate the body to changes occurring in modern apperception. The invention of moving pictures had an enormous impact on everyday visual experience, challenging, if not supplanting, the theater's original role as educator of mass audiences. Kiesler proved one of the first stage designers to apply experimental animation and film projection technology in conterminous relationship to built-form. In creating theatrical spatial effects with new multi-media techniques, he began to radically reconstitute the limits of stage design and theater architecture to form an affective space—an illusory *mise-en-scène*.

This book critically examines Kiesler's transformation of *theatrical space* into the architecture of a total work of art of effects (the *Gesamtkunstwerk*) that fuses the theatricality of viewers, spectators, structure, light, rhythm, and sound into one endless and cohesive spatial atmosphere. Advancing animation techniques to create contracting and expanding cinematic environments that explode any notion of architecture constructed with walls that define space, Kiesler instrumentalized the haptic techniques of film—(unclear relationship between haptic techniques and tactile habits partly because of the dash) the tactile habits of viewer perception—to motivate audiences and spectators to actively engage their surroundings.

Kiesler brought these spatio-temporal strategies to bear on his commercial display designs in the 1920s, by originating stage design tactics to advance mass consumer markets. In employing “time-motion” studies similar to Étienne-Jules Marey's early chronophotography investigations Kiesler constructed continuous forms that modulated in response to bodily actions and visual perceptions. Through inventive laboratory research, Kiesler experimented with new ergonomic systems geared to evolving situations. His work proved paradigmatic of new aesthetic and biopolitical practices emerging in the arts and sciences throughout the twentieth-century and profoundly impacted spatial perception and body culture in the production of our built environment. In an effort to construct structures readily adaptable to the temporal needs of a constantly changing advanced capitalist society, Kiesler derived techniques to support more flexible environmental systems that could modulate—shift in response—to everyday actions, human desires, and bodily needs.

Applying his research to invent an innovative organic architecture of expanding (*détente*) structures and free-flowing surfaces, Kiesler's elastic constructions operate similarly to the interiors of the Art Nouveau. As argued by Walter Benjamin, nineteenth-century interiors used plasticity of wrought iron and concrete as a naturalized casing to "confront the technologically armed environment."⁵ Similarly, Kiesler's continuous forms reacted in response to the body-in-motion to parry the shock of new modern media and the machine industry. "Like the total artwork [*Gesamtkunstwerk*] of effects" of the "organic creations" of "Berlin Picture Palaces," as described by Siegfried Kracauer in the "Cult of Distraction," Kiesler's architecture attempted to "glue the pieces back together after the fact."⁶ If the ancients composed the visual and temporal field and the modern sciences decomposed it—Kiesler's naturalized structures and responsive elastic systems posed a synthetic attempt to seam those distinctions back together.

Aiming to generate immersive atmospheres that guided audiences and viewers alike to participate more naturally—if unconsciously—with their surrounding technological environments, Kiesler's continuous spaces and ergonomic structures effectively seamed over any interval between what philosopher Henri Bergson might have described as the conscious snapshots of human perception. Kiesler's continuous structures sought to smooth-out disturbing differences, separation, and disjoint in both the *physis* and the *psyche* of the dweller by modulating architectural surfaces to everyday human motions, and eliminating non-productive actions. Continuous architecture thereby served to naturalize the harsh, jarring, and discomforting effects of twentieth-century technology ensuring more satisfying, productive lives by creating spaces that encouraged the body to move about more freely and habitually—if not autonomically.

(TITLE) examines Kiesler's continuous forms of art and architecture *modulated* to the actions and perceptions of everyday moving bodies and systems in order to question the dialectical effects of adaptable elastic structures on the construction of modern subjectivity and the training of human life.

Contemporary Preoccupations

My fascination with Kiesler's notions of the Endless, elasticity, and continuity stem not only from his development of modulated forms throughout the twentieth-century, but similar preoccupations that have emerged more recently in contemporary architectural culture. Since the 1990s, Kiesler's continuous

forms proved to resonate formally and spatially with the intellectual and technological interests developing in the academy and the architecture profession. Intellectually—many architects, academics and their students previously found formative inspiration in the writings of French philosophers Gilles Deleuze and Felix Guattari. In *Bergsonism*, *Thousand Plateaus*, and *The Fold*, Deleuze promoted architectural forms and ideas that, similar to the Baroque, could unfold, evolve, and envelope, to create a labyrinth of contracting and expanding continuous elastic surfaces.⁷ Deleuze’s explicit call for “endless” architecture in his 1988 book *The Fold* unwittingly resonated with Kiesler’s Endless research and by the turn of the twenty-first-century, generations of architects were experimenting with digital technologies that they believed might achieve complex curvilinear if not continuous organic spatial forms—perhaps all too similar to Kiesler.⁸ [Fig. 0.3] As digital design architect, Greg Lynn fully acknowledged, Kiesler’s concept of the Endless was the best historic precedent for the unfolding of curved space. Kiesler’s work also proved extremely topical in light of computer animation technology now readily available to architects.⁹

Kiesler’s relevant association with digital architecture, however, was not altogether new. As early as 1965, architects had predicted computers would eventually be used to generate and construct continuous surfaces similar to Kiesler’s designs.¹⁰ [Fig. 0.4] The aerospace industries had been using computers to create complex calculable warped surfaces. Responding to this research, Industrial Design student Raphael Roig at the University of California, Los Angeles realized—“it would only be a matter of time before computer technology would be able to reduce to constructible terms the inherent intricacies of forms similar to Kiesler’s multiple-warped surfaces.”¹¹

Artists and architects—Antonio Gaudi, Erich Mendelsohn, Frei Otto, Kiyonori Kikutake, and Kiesler among many others had conceived and modeled complex structures and forms with varied degrees of technical proficiency during the twentieth-century. Roig recognized that these new computer technologies could assist the design and construction of similar innovative building structures. Roig’s thesis although brief and unpublished, established a connection between curvilinear sculptural forms, continuous spaces, and the use of new computer technology. As future advances developed over the next thirty years, alongside intellectual interests to revive endless spaces, Kiesler’s seemingly impractical building vision finally began to take shape. [Fig. 0.5] [Fig. 0.6]

My desire to study Kiesler's work did not fall far from Roig's observations. I began studying Kiesler, not for the beauty or detail of his work, but the depth and richness of his spatial visions and provocative ideas, as they seemed to correlate with the architectural interests of the early twenty-first-century. Kiesler's theoretical, practical, and laboratory research in organic design, endlessness, vitalism, morphology, affect, media technology, elasticity, flexible constructions, multiplicity, time-motion studies, automation, and living machines seemed suspiciously similar to contemporary preoccupations. As Kiesler's project appeared unfinished and inordinately topical, it seemed important and beneficial to me as an architect, theorist, historian, and scholar to better understand his work.

As contemporary architect Ben van Berkel observed in the late 1990s, "often to understand our ambitions and secret desires, we revert to history. And if we don't others will do it for us, point us out which architects of the past were already engaged in the subjects that intrigue us now. In this individuated approach to history Frederick Kiesler has achieved a special significance in recent years."¹² Digital design architects either forged an interest in Kiesler's work or denied any comparison. Van Berkel was not reticent to align himself with Kiesler's ideas, and "while the full extent of Kiesler's spatial aspirations is unknowable," as Van Berkel recognized, "the computational techniques now at our disposal enable the deepest understanding of Kiesler ever possible." [Fig. 0.7] In recent years computer animation strategies have begun to incorporate urban growth analysis, epigenetic and morphogenetic scripting techniques, and material and visual effect experiments, alongside extensive integration of complex structural, environmental, and ecological building practices. The computer has achieved non-linear complexity in architecture beyond the limits of human capacity. How then has this new computer animation generated design practices in contemporary robotics and advanced our understanding of Kiesler and his effect on twentieth-century modernism?

Embedded in the history and theory of animate machines and automated technologies are a series of suppositions that resurfaced at the turn of the twenty-first-century in light of new computer practices. Kiesler's similar ideas and the rhetoric that pervades contemporary design, inspired me to dig more deeply into lesser known areas of Kiesler's research. From Kiesler's interest in time-motion studies and early experimental animation films to his extensive study of the scientific, philosophic, and even pseudo-psychoanalytic debates of continuous forms and spaces became the central targets of my

investigation. They led me to study Kiesler's endless spatial concepts more fully in relationship to modern media and technology. Although imbedded in the reactions and experiments surrounding modern media and technology, the Endless was an architectural innovation, not the simple by-product of new techniques or new materials alone. Kiesler's spatial vision redefined modern architecture as an intellectual endeavor as much as a practical, technological, or sculptural enterprise.

Although almost all impossible to construct, Kiesler's projects were visionary.. As Roig understood, Kiesler's ideas exceeded the technological capacities of the twentieth century. His theaters, for example, were for the most part speculative intellectual research experiments that failed at the time to garner mainstream appeal. Eventually the continuous forms and folding spaces of Kiesler's Endless House would prove, as Johnson believed, "a work of art the 20th century would be proud of," but at an estimated cost that exceeded one million dollars in the 1950s, Johnson among many other potential clients chose not to take the risk to try and build the Endless House.¹³ Kiesler's Endless concept instead remained a *provocateur*—a visionary idea outside normative modern traditions.

The *Provocateur*

Often slighted by artists, critics, and architects alike for his radical constructions, by 1947, *Architectural Forum* had labeled Kiesler "Design's Bad Boy" for challenging the profession with his sinuous organic forms and complex curvilinear structures.¹⁴ [Fig. 0.8] Kiesler moved outside dominant trends in modern architectural practice with a theoretical approach not readily accepted or easily understood. He did not prove to be a great architect in his lifetime, but instead survived on the periphery of the profession as a sculptor, stage designer, writer, and occasional university professor and lecturer. A minor figure who did not receive substantial recognition from the majority of architects, historians, or his peers, Kiesler acted as his own greatest historicist and publicist. He crafted many articles, essays, and two substantial books that established a clear historical progression of his "Life's Pursuit" to dwell *Inside the Endless House*.¹⁵ [Fig. 0.9] If not for his own knack for self-promotion, resilient talent for creative production, and strong support from avant-garde friends, family, and a handful of very influential admirers, Kiesler would not have achieved his now remarkable historical presence.

Scholars had already begun to study Kiesler's life and work before his passing in 1965, and there have been several art historical surveys, articles, dissertations, and monographs on Kiesler.^{1617 18 19 20 21 22 23 24 25} In these studies, Kiesler became a popular subject of post-modern reconstruction that sought to promote his elusive artistic oeuvre of De Stijl, Constructivist, Dada, Expressionist, and Surrealist preoccupations. Perhaps best described by Lisa Phillips in her exhibition catalogue for the Whitney Museum in 1989, the perception of Kiesler's work at the time was one "neither stylistically consistent nor bound by the limitations of single medium or discipline." Kiesler had "always been difficult to categorize" she attested, because he was "an enigmatic, elusive figure," and "in our Postmodern era," she concluded "it is precisely this interdisciplinary quality and multidimensionality that make Kiesler so intriguing." As an artist, architect, theorist, and stage designer who participated in so many modern movements, Kiesler appeared eclectic and elusive.

Receiving acclaim for his inconsistencies rather than any substantive focus or enduring interest, Kiesler's legacy appeared fairly irrelevant to architecture and its history. Prior to the mid-1990s Kiesler and his work had proven of little interest to mainstream practitioners and architectural critics. In 1996, however, Kiesler's notoriety began to change after the Centre Georges Pompidou's presentation of a significant exhibition along with several highly focused theoretical texts published together as a collection monograph. In "Rewriting the history of Modernism," as Denis Connolly of *the Architects' Journal* labeled the Pompidu's effort,²⁶ he noted that Kiesler was "little known" at the time, but was considered "a seminal influence on Archigram, Hans Hollein, Coop Himmelblau and a whole generation of utopian 'paper architects'."²⁷ [Fig. 0.10]^{28 29 30 31} An important figure in the history of utopian architecture, Kiesler had previously been well-known and appreciated by a select few; but since the exhibition, several architectural critics, writers, and historians would soon become more interested in Kiesler's many unique works.

(TITLE), a revision of my dissertation completed at Princeton, poses a unique trajectory from much of this previous study surrounding Kiesler and his practice. Instead of concentrating on any one architectural project, or his art historical relevance, I examine Kiesler and his practice through a focused study of his theoretical research as it evolved within architecture design. Although it is tempting to investigate each of Kiesler's wide-ranging interests in detail, my intention is not to view Kiesler in terms of

individual projects in a paratactic fashion, but to focus on understanding the relationships between what might appear divergent ideas that developed in his theater, art, exhibition, theory, and educational practices. I am interested in tracing how these forces informed his architecture career and the broader field of contemporary design culture. In fact, it is precisely Kiesler's investment in such an extraordinary range of seemingly unrelated multi-media design practices that shapes his thinking and innovation.

Kiesler is all too often identified for the disparities rather than the continuities within his work, as a stage designer and licensed architect obsessed with continuity. It is more relevant to look comprehensively at his research practice to derive a cohesive explanation for his body of work. The threads that began to tie this study together, originated in analysis and observation of Kiesler's consistent use of terminology. As a theorist interested in rhetorical analysis—the art of communication—Kiesler's use of words such as “contraction and expansion,” “elasticity,” “continuity,” and “endless” identified the consistent interests that evolved throughout his work since the 1920s. Architects and artists are notorious for divining inspiration from a multiplicity of expressions. A fascination with the relationship between writing and designing aligns my concerns as an architect and theorist with Kiesler's preoccupations.. Judging from the speed with which he produced most of his designs, I suspect Kiesler spent at least as much of his time writing as he did drawing and modeling. He left behind an extensive archive of written work—much of which has yet to be published and a library of books and a multitude of newspaper and magazine clippings.. “To understand Kiesler” therefore means to read his drawings, clippings, models, writing, and library books in relation to his cultural milieu.. The correspondence between these varied materials affords original insight into Kiesler and the Modern period.

Kiesler was an intellectual architect with visionary ideas and provocative artistic sensibilities and insights. Reading his work provides an opportunity to understand a unique trajectory of history that continues to resonate within contemporary debates.

As renowned architectural critic Herbert Muschamp argued in his 2001 New York Times obituary for Lillian Kiesler (the architect's daughter?): Kiesler “is a model for those who wish to pursue architecture as an ‘alternative practice’.. Somehow, he made a go of it. Diller and Scofidio, Raymund Abraham, Greg Lynn, Wolf Prix and Eric Owen Moss are among many independent architects today who stand on Kiesler's shoulders.... Many architects are proceeding on the route he opened up. Besides those I've

mentioned, the group includes Tod Williams and Billie Tsien, Steven Holl, Frank Gehry, Philippe Starck, Lebbeus Woods and Thom Mayne.” Kiesler’s life and work is an exemplary study in the history of architecture, as his practice has provided a new paradigm for architects by allowing them to build their careers formatively through design research prior to substantively engaging in a building practice—a methodology that has since led to the greatest architecture and built works of contemporary times.

The Early Years

Theorizing his own work from his first interests in design, Kiesler left a wealth of knowledge on a seemingly incongruent range of subjects prove surprisingly synthetic and informative, helping us to better understand the history and theory of modern and contemporary design research and its culture. However, because of the limited material available, and often inaccurate existing historical record, scholars have had little success in reconstructing Kiesler’s youth and early background. Gaps in the archive and discrepancies in Kiesler’s past fuel unsubstantiated controversy and debate surrounding his work.

Claiming to be from Vienna, although Kiesler was born September 22, 1890 in Cernauti Rumania to Dr. Julius Kiesler and Rosemarie (Maria) Meister. Throughout his life, Kiesler offered various birth dates and a variety of other misleading information about his background.³² Kiesler’s mother died when he was only one, or one and half years old, and so his father and nursemaid-housekeeper who allegedly, “took better care of his body than his soul,” raised him alongside his older brother and sister.³³ Conflicting opinions surround the architect’s seemingly amicable upbringing. Lillian Kiesler, suggested his father, “held great affection for his youngest child [Kiesler],” and showing interest in his “marked involvement with drawing,” Kiesler’s father had arranged, “for him to draw at Vienna’s Spanish Riding School when he was six [years old].”³⁴ On the other hand, it also appears that Kiesler broke away from the “tyrannical rule” of his older brother, the “birch rod” of his nursemaid, and the “strict disciplinarian” attitude of his father, to become a revolutionary artist.³⁵ Although his father was “chief magistrate of Vienna,” and supported Friedrich’s youthful interests in art, while studying at the Academy of Fine Arts, Vienna (Akademie der bildenden Künste Wien) and Viennese School of Technology, scholars have surmised that Kiesler, “survived on scholarships and prizes,” and, “his years as a student in Vienna (1908-1910) were marked

by penury—the habit of living on next to nothing.” Apparently,, Kiesler’s father wanted him to pursue a career in business, and their disagreement fractured Kiesler’s relationship to his family.³⁶

Little correspondence, however, is available between Kiesler and his relatives to verify his past. Although, his nephew did move to the United States and letters exist from several family members seeking Kiesler’s assistance to emigrate to America—Kiesler was not close to his relations and did not provide them much support. Little is revealed by Kiesler or anyone else about his childhood, except in a 1949 French editorial by the Editors of *L’Architecture d’aujourd’hui*, that claims, “due to a painful childhood he retained an almost malade (?) nervousness and an exaggerated sensitiveness.”³⁷

The scant facts about Kiesler’s youth are riddled with uncertainty, but we do know that Kiesler preferred to say that he was from Vienna, had few financial resources, and that journalists and historians often suggested he had a “painful childhood” which scarred him physically and psychically. .

Kiesler lost most of his artwork prior to 1926 in transit to the United States, so there is little record to further trace his early interests and ideas.³⁸ Although Kiesler did attend art school, and Lillian Kiesler stated he earned his diploma from the Academy of Fine Arts, Vienna (Akademie der bildenden Künste Wien) research indicates that he left without graduating.³⁹ Equally, by his own account, Kiesler claimed to have served in the First World War after leaving school. Drafted, he served on the front and in the Press Corps, and his participation in the First World War reportedly played an influential role in his formative interests.(formative interests is a bit vague).

In 1918, in response to the end of World War I, Kiesler began to develop the ideas behind what would later become his “galaxial” projects. Although no extant images remain, Kiesler later described a fragmented series of portraits rising to the infinite, which veiled in white trace in grisaille, “a vast field of human bodies whose proportions grew larger and larger the higher they were placed.”⁴⁰ In their composition, there were about twenty pieces of irregularly shaped paintings fashioned out of gray cardboard nailed to the wall at different intervals and covered with white trace paper.

Kiesler proposed that uniting these traumatic fragmented images was fundamental to his thinking and interest in a universal language. However, as there is no evidence to support he actually drew these images, and as he would later argue his interest in continuity formed while producing his stage designs in 1923, it is difficult to draw a relevant conclusion.⁴¹ (difficult to conclude that he actually created them?)

Kiesler's historical record is largely drawn from his own publications and writings. In a remarkable explication of his life project and its history of development, Kiesler outlined for posterity the nature and formative history of his work in an interview given in 1961 to Thomas Creighton of *Progressive Architecture*.⁴² In this interview, Kiesler explained how Otto Wagner's early Art Nouveau buildings, and the lively atmosphere in cavernous cafés around Vienna throughout the late 1910s to early 1920s shaped his artistic development.⁴³ Having little financially, eating, "rice chiefly and mushrooms," he frequented various cafes and museums around the city, which he viewed as, "the caves of the artists for the germination of their ideas."⁴⁴ Although he never mentioned specific meetings in these cafés, Kiesler elaborated on the exceptional architecture of Adolf Loos, Joseph Hoffman, and Wagner and the varying daily gatherings of Loos, Alban Berg, Alfred Adler, Robert Musil, Lenin, Albert Ehrenstein, and Franz Kafka.

Despite the vibrancy of Vienna's architectural culture, Kiesler's purported, "curiosity and restless temperament," eventually took him away from Vienna to Berlin where he began to explore experimental research using multi-media technology for modern performance spaces.⁴⁵

Structure

Our story of Kiesler and his work begins with these first visits to Berlin in the 1920s, where his career as a stage designer and experimental theater architect began—and although not entirely diachronic—this study explores how these early research investigations developed and were applied within Kiesler's innovative housing, museum, and theater designs through the 1960s. I am not, however, interested in discussing all of Kiesler's work, but rather wish to focus on a particular strain of ideas, structured around his first and last proposals for theater architecture—his Endless Theater (1925-1926) and his Universal Theater (1959-1962). Divided into five chapters, this text covers Kiesler's interests in stagecraft, display, education, gallery design, and architecture. Through these topics, I develop and investigate a series of synthetic themes and strategies that surround Kiesler's study of the Endless, elasticity, continuity, and modern design culture as a research practice in general. All themes, I propose, are intimately related to his first preoccupations with animation and automation in Berlin, Paris and Vienna in the 1920s, which he then brings to the United States when he moves to New York in 1926. Such topics exclusively revolve exclusively around Kiesler's fascination with automatism, the human body, and

scientific advances in machine technology. Such conflation of the body and the machine come to bear on Kiesler's understanding and development of new building forms that engage more continuously with the surrounding natural and built environment more appropriate and responsive to the dramatic needs of a newly forming robotic culture of automated mobile and flexible structures and transformative ever-evolving systems.

Chapter One deals with modern stagecraft and investigates Kiesler's formative relationships to the European avant-garde and their use of machine technology relevant to his conception of the Endless. "Actorless Stages and Endless Theaters" provides a close examination of Kiesler's involvement with stage design from a variety of sources including Constructivism, Dadaism, and Futurism. Merging seemingly antithetical ideas into a unique spatial practice, I explore how Kiesler found inspiration from the plastic arts, early experimental animation, automatons, marionettes, and the radical interests of post-war European theater to evolve a unique spatial concept—Endlessness. This idea he notably derived outside building practice through comprehensive research on modern theater for a series of exhibition designs in Europe and America from 1924 to 1926. My first chapter outlines how Kiesler used exhibition design to substantively investigate the resources and materials needed to conceptualize his architectural innovation, and poses exhibition design as a substantive new media for architects to engage in experimental design practice.

The second chapter—"Habits and Tactics: The Automatism of Display"—pursues Kiesler's adaptation of avant-garde stage and film practices discovered in his early research to create atmospheric spaces in New York City during the late 1920s. Relocating from Europe to the United States in 1926, Kiesler applied radical theories of the modern stage to a series of display spaces to transform local urban streetscapes into contemporary consumer markets. In his show window designs for *Saks Fifth Avenue*, for example, Kiesler introduced a wide-range of Dadaist, Constructivist, De Stijl, and Surrealist practices to the American advertising industry. Employing an array of visual and material effects in his practice—he constructed auratic spatial environments that blurred the distinctions between interior and exterior urban life to seduce passersby—to motivate them habitually if not autonomically—into varied commercial stores and buildings. Interested in controlling viewer participation—Kiesler constructed his Film Guild Theater to

motivate audiences to assume the position before the cinema screen where distracting illusory affects performed to expand the perceptual limits of the architectural body.

Further investigating the visual and tactile techniques employed to control human behavior and expand the spatial limits of his architecture, the third chapter, “Laboratory Experiments: Design-Correlation,” is an exploration of Kiesler’s pedagogical exercises taught in his courses at Columbia and Yale Universities on the correlations between aesthetics and the body. These exercises lead to Kiesler’s research models for his Mobile-Home-Library prototype and Vision Machine project. Inspired by interests in stagecraft, film, and display, Kiesler engaged extensively in research on new forms of architecture *modulated* to perceiving bodies-in-motion. To this end, he produced student assignments that radically challenged normative educational practices to advance a series of experiments that might derive new elastic spatial conditions. Examining nature’s elastic processes of growth and form to manufacture responsive building systems correlated to changing environmental conditions, Kiesler invented what he called the study of “biotechnique”—a biotechnological design methodology inspired by the history and theory of animal and plant morphology. Expanding upon these processes, in his laboratory he generated and tested new forms of architecture structured not on the static “universal man” promoted by Le Corbusier, for example, but instead on the possibility of an “evolutionary” man in motion. Kiesler proposed to use his research to derive innovative designs that could move, shift, and adapt to evolutionary changes occurring within the present and future environment.

Applying these results from his Design-Correlation Laboratory to a series of gallery exhibition designs during the 1940s, Kiesler began to construct more liberatory environments that might resist the controlling effects of his earlier design research. In association with the inner circle of the Surrealist group, including close collaborations with André Breton and Marcel Duchamp, Kiesler invented a series of gallery exhibitions in New York and Paris that invented an alternative approach to the more delimiting practices of modern functional design. Chapter Four—“Autonomic Vision: The Surrealist Galleries and Museums,” provides an analysis of Kiesler’s display techniques that formed more dynamic and interactive open exhibition spaces in contradistinction to the typical modern gallery program of the white painted box. [Fig. 0.11, 0.12] Kiesler’s new ideas in gallery display and exhibition practices favored a synthetic and

theatrical approach to modern museum design as demonstrated through his final built museum—the Shrine of the Book in Jerusalem (1959-1965). [Fig. 0.13, 0.14]

Finally, in advancing his ideas and research from his stage, exhibition, show window, furniture, education, and gallery design projects, Chapter Five, “Elastic Architecture: Humanity, Technology, and the Environment,” closely examines Kiesler’s unique and visionary approach to building practice through a series of his theater, housing, and urban design projects. Here, I analyze how Kiesler systematically developed a new spatial order that was at once continuous and free-flowing, while at the same time able to shift and evolve to the changing temporal parameters of multiple sites, users, and programs. **As best demonstrated in the “elastic planning strategies” he suggested, he deployed in his most compelling work,** (is there a missing sentence here?) the Universal Theater (1959-1962), Kiesler’s competition design for a thirty-story skyscraper provides a concluding study on his Endless concept. The Universal Theater, a complex organic urban structure, demonstrates the construction of an endless series of spatial contiguities situated within a highly controlled multi-media environment that supports vast revolutionary opportunities within an economically viable and socio-politically complex corporate milieu. Kiesler’s Universal Theater proved his greatest ethical proposal, as it aimed to merge theater, art, and business in support of a new and inclusive building program that challenged functional modern dogma to propose multiplicity as the new spatial order of the late-twentieth-century.

Ultimately, it is Kiesler’s research that makes his work so compelling and necessary to revisit today. Studying a wide range of complex interests, on the fringe of modern architecture—deeply invested in the shifting biopolitical terrain of the mid-twentieth-century—Kiesler wrestled with his desire to create architecture that at once could produce a controlled and sustainable environment, and provide the greater flexibility and adaptability necessary to an evolving, temporal world culture.

Inspired by robots, the very nature of animated moving systems, Kiesler created elastic architecture by forming a continuous series of heterogeneous spaces which resonate with the challenges facing contemporary architecture practices today. Architecture continues to have a profound effect on the human condition, beyond the purely formal, functional, and pragmatic. For better or worse, buildings remain intimately engaged in the ever-changing tactical operations that influence, if not train, the human condition—structuring, if not defining, our customs and habits. In forging one of the most creative,

nuanced, and compelling research practices of modern times, Kiesler—with his specific focus on the correlation between humanity, technology, and the built environment—proves a brilliant precedent to our own contemporary ambitions that seek to understand the complexity of shifting power structures—from control to liberation—which impact subjectivity within a constructed global environment. As a visionary architect, Kiesler challenged these subjects with intelligence, sensitivity, and curiosity. His work and research methods offer valuable insights for contemporary architects.

Notes: Introduction

¹ See Philip Johnson, “Three Architects,” *Art in America*, March 1960, 70.

² Letter Phillip Johnson to Reid Johnson, March 1 1965, Frederick Kiesler Papers, Box 5 of 7, Correspondence Jan-Mar 1965 Folder, Smithsonian American Archives of Art, Washington D.C.

³ Letter Paul Rudolph to Reid Johnson, January 5, 1965, Frederick Kiesler Papers, Box 5 of 7, Correspondence Jan-Mar 1965 Folder, Smithsonian American Archives of Art, Washington D.C.

⁴ See Frederick Kiesler, “Epilogue III: The Correalism of Nature,” *The ‘Endless House’: Inside the Endless House: Art, People and Architecture: A Journal* (New York: Simon and Schuster, 1966) 146.

⁵ Walter Benjamin, “Paris – the Capital of the Nineteenth Century,” *Charles Baudelaire: A Lyric Poet in the Era of High Capitalism*, tr. Harry Zohn (London: NLB, 1973), 168. Quote revised to “confronted by the technologically armed world,” in Walter Benjamin, “Paris – the Capital of the Nineteenth Century,” in *Walter Benjamin: Selected Writings, Volume 3, 1935-1938*, ed. Howard Eiland and Michael Jennings, tr. Edmund Jephcott, and Howard Eiland (Cambridge: Harvard University Press, 2002) 38.

⁶ Siegfried Kracauer, “Kult der Zerstreung,” in *Das Ornament der Masse: Essays*, ed. Suhrkamp Verlag (Frankfurt: Suhrkamp Verlag, 1963); English translation, “The Cult of Distraction: On Berlin’s Picture Palaces,” in *The Mass Ornament: Weimar Essays*, tr. and ed. Tom Y. Levin (Cambridge: Harvard University Press, 1995) 324.

⁷ See Gilles Deleuze, *Le Pli: Leibniz et le baroque* (Paris: Les Editions de Minuit, 1988); English translation, *The Fold: Leibniz and the Baroque*, tr. Tom Conley (Minneapolis: University of Minnesota, Press, 1993), particularly Chapter 1.

⁸ *Ibid.* 3, 7, 8, 9.

⁹ Greg Lynn, *Animate Form* (New York: Princeton University Press, 1999), 34.

¹⁰ See “Will the Computer Change the Practice of Architecture?” *Architectural Record*, January, 1965. See also “The Computer and Architecture,” *Architectural and Engineering News*, March 1965.

¹¹ Raphael O. Roig, *The Continuous World of Frederick J. Kiesler*, University of California, Los Angeles, Master's Thesis, Department of Industrial Design, June 1, 1965, 92, MoMA Archive Item # 10 box 51.

¹² Ben van Berkel and Caroline Bos, "A Capacity for Endlessness," *Quaderns D'Arquitectura + Urbanism*, 1999, 93.

¹³ Letter Phillip Johnson to Reid Johnson, March 1 1965.

¹⁴ Ben Schmall, "Design's Bad Boy: a pint-sized scrapper who, after thirty years, still challenges all comers," *The Architectural Forum*, February 1947, 88-92.

¹⁵ Frederick Kiesler, *The 'Endless House': Inside the Endless House: Art, People and Architecture: A Journal* (New York: Simon and Schuster, 1966).

¹⁶ as early as 1958, Burton Weekes had already written a Master's Thesis on Frederick Kiesler's 1932 Universal Theater and its implications for contemporary theater design. In 1958, with Kiesler's second wife, Lillian Kiesler's support, Katsuhiko Yamaguchi produced a substantial catalogue on Kiesler, published in Japan. In 1965, Roig, completed the second Master's Thesis on Kiesler, and by 1970, Elaine Schwartz completed her thesis documenting and positioning Kiesler's life, ideas, and works. Art historians soon began to look more closely at Kiesler, and by the end of the 1970s he became the subject of several studies and critiques that searched to position his innovation, or expose the many influences at play in his work. Kiesler became a popular subject of post-modern reconstruction that sought to promote his elusive oeuvre of De Stijl, Constructivist, Dada, Expressionist, and Surrealist preoccupations. In 1979, Cynthia Goodman was perhaps the first art historian to study with consistency Kiesler's work. In 1981, Michael Sgan-Cohen produced a large dissertation that catalogued Kiesler's entire series of best-known works. In 1982 and 1984, Barbara Lesák and Roger Held re-constructed and historicized Kiesler's theater projects, particularly his early works.¹⁶ And with support from Lillian Kiesler, Lisa Phillips produced a substantial exhibition and catalogue of Kiesler's projects for the Whitney Museum in 1989. Lisa Phillips perhaps best described the perception of Kiesler's work at that time as being "neither stylistically consistent nor bound by the limitations of single medium or discipline. Kiesler had "always been difficult to categorize" she attested, because he was "an enigmatic, elusive figure," and "in our Postmodern era," she concluded "it is precisely this interdisciplinary quality and multidimensionality that make Kiesler so intriguing." As an artist, architect, theorist, and stage designer who participated in so many modern movements, Kiesler appeared eclectic and elusive—a bit of something for everyone. Kiesler received acclaim for his inconsistencies rather than any substantive focus or enduring interest. Continuing along these same lines of critique, in

1988, art historians Dieter Bogner and Yehuda Safran began their research into Kiesler. Bogner produced one of the most accurate and complete art historical surveys on Kiesler's work prior to the 1990s, which helped to fuel wider interest in Kiesler and his designs. In addition, architectural historian Anthony Vidler in 1992 offered a brief note on Kiesler's work in *The Architectural Uncanny* that suggested insight for further architectural research and investigation.

¹⁷ Burton Weekes, *Analysis of Frederick J. Kiesler's "Universal theatre" and implications of flexible theatre in America today*, Thesis (M.A.), Syracuse University, 1958. (Microfilmed--Syracuse, N.Y: 1966)

¹⁸ Katsuhiro Yamaguchi, *Frederick Kiesler, environmental artist* (Tokyo: Bijutsu Shuppan-sha) 1978.

¹⁹ Raphael O. Roig, *The Continuous World of Frederick J. Kiesler*, see also Ellen Jane Schwartz, *Frederick Kiesler: his life, ideas and works*, Thesis (M.A.), University of Maryland, 1970.

²⁰ Cynthia Goodman. "The current of contemporary history; Frederick Kiesler's endless search." *Arts Magazine* 54, Sept 1979, 118-123; see also Cynthia Goodman, "Frederick Kiesler; designs for Peggy Guggenheim's Art of This Century Gallery." *Arts Magazine* LI/10, June 1977, 90-95. Cynthia Goodman, *Frederick Kiesler (1890-1965): visionary architecture, drawings and models, galaxies and paintings, sculpture, December 9-January 3, 1979* (New York: André Emmerich Gallery, 1978).

²¹ Michael S. Sgan-Cohen, *Frederick Kiesler: Artist, Architect, Visionary—A Study of his Work and Writing*. Ph.D. Dissertation, Art History Department, City University of New York, 1989.

²² Lisa Phillips, *Frederick Kiesler* (New York: Whitney Museum of American Art in association with W.W. Norton & Company, 1989)

²³ Lisa Phillips, "Environmental Artist," in *Frederick Kiesler*, ed. Lisa Phillips (New York: Whitney Museum of American Art in association with W.W. Norton & Company, 1989) 108.

²⁴ Bogner, Dieter. *Friedrich Kiesler: Architekt, Maler, Bildhauer, 1890-1965 /Frederick Kiesler* (Wien: Löcker, 1988). See also Yehuda Safran, "Frederick Kiesler 1890-1965: AA Exhibitions Gallery, Members' Room & Bar 8 November-9 December 1989 [exhibition review]." *AA files*, n. 20, Autumn, 1990, 83-88. See also Yehuda Safran, "Frederick Kiesler, 1890-1965: in the shadow of Bucephalus," *AA files*, n. 20, Autumn 1990, 83-88. See also Frederick Kiesler, *Frederick Kiesler 1890-1965*, ed. Yehuda Safran. London: Architectural Association, 1989.

²⁵ Anthony Vidler, *The Architectural Uncanny: Essays in the Modern Unhomely* (Cambridge: MIT Press, 1992) 153.

²⁶ *Frederick Kiesler: Artiste-architecte, Colletion Mongraphie*, ed. Chantal Béret (Paris: Centre Georges Pompidou, 1996).

²⁷ Denis Connolly, "Rewriting the history of Modernism [exhibition review]," *Architects' Journal*, n. 3, v. 204, July 18, 1996, 45.

²⁸ See Beatriz Colomina, "La Space House et la psyche de la construction," in *Frederick Kiesler: Artiste-architecte, Colletion Mongraphie* (Paris: Centre Georges Pompidou, 1996) 67-77.

²⁹ Mark Wigley, "Towards the Perforated School," *Volume*, No. 1, *Archis vol. 20, #1*, 2005, 36-50. See also Mark Wigley, "The Architectural Brain," *Network Practice*, ed. Anthony Burke, Therese Tierney (New York: Princeton Architectural Press, 2007) 30-53. See also Detlef Mertins, "Where Architecture Meets Biology: an Interview with Detlef Mertins," *Interact or Die!*, ed. Joke Brouwer and Arjen Mulder, (Rotterdam: V2 Publishing, 2007) 110-131.

³⁰ Roland Lelke, *Der endlose Raum in Frederick Kieslers Schrein des Buches* (Aachen: Shaker, 1999); originally presented as the author's thesis (doctoral)--*Dead Sea Scrolls. Museums Israel Jerusalem 1950-2000*, Technische Hochschule Aachen, 1998.

³¹ Gunda Luyken, *Frederick Kiesler and Marcel Duchamp—Rekonstruktion ihres theoretischen und künstlerischen Austausches zwischen 1925 und 1937*, Inauguraldissertation, Staatliche Hochschule für Gestaltung, Karlsruhe, Berlin, 2002.

³² See Maria Bottero, "Ideas and Work," *Frederick Kiesler: Arte Architettura Ambiente* (Milano: L Electra, 1996), 190 and Valentina Sonzogni, "Bibliography," in Dieter Bogner, *Friedrich Kiesler: Art of This Century* (Wien, Hatje Cantz, 2003) 94; Kiesler and others however, gave varying dates for his birth in Vienna from December 9, 1890 to other dates of 1892, 1896 or 1898. See Lisa Phillips, "Frederick Kiesler Chronology 1890-1965," *Frederick Kiesler* (New York: Whitney Museum of American Art in association with W.W. Norton & Company, 1989), 139. Lillian Kiesler, "Frederick Kiesler Biography," New York, 10/31/80, 165, as held in the Frederick Kiesler Papers 1923-1993, Microfilm Reel, 127, Archives of American Art, Smithsonian Institution, New York. Guenther Feuerstein, "Friday January 14, 1966 (Vienna.....): Frederick Kiesler Died in New York," as held in the Frederick Kiesler Papers 1923-1993, Microfilm Reel 128, Archives of American Art, Smithsonian Institution, New York. Friedrich Achleitner, "Fascination of Space: The work of a lifetime, of the recently died Architect Frederick John Kiesler," as held in the Frederick Kiesler Papers 1923-1993, Microfilm Reel, 127, Archives of American Art, Smithsonian Institution, New York.; R.L. Held, *Endless Innovations: Frederick Kiesler's Theory and Scenic Design* (Ann Arbor: UMI Research Press, 1982), 7.

³³ See Maria Bottero, "Ideas and Work," 190.

³⁴ See Lillian Kiesler, 165.

³⁵ See R.L. Held, 8.

³⁶ See Maria Bottero, "Ideas and Work," 190.

³⁷ See The Editors, *L'Architecture d'aujourd'hui*, "Translation from the French of the Editorial of *L'Architecture d'aujourd'hui*," June 1949, as held in the Frederick Kiesler Papers 1923-1993, Microfilm Reel 127, 2, Archives of American Art, Smithsonian Institution, New York.

³⁸ Kiesler had kept his work in storage in Vienna which included drawings of the human body, landscapes in different techniques, sketchbooks, woodcuts, etchings, and lithographs. However, during the Second World War, he attempted to salvage his boxes by shipping them through Switzerland, and then London. From all accounts, they never arrived. See Letter Frederick Kiesler to Mr. M.S. Henderson, British Consulate General, October 28, 1940, Frederick Kiesler Papers, Box 4 of 7, Correspondence 1940 Folder, Smithsonian American Archives of Art, Washington D.C.

³⁹ See Lisa Phillips, 139. Also see Valentina Sonzogni, "Bibliography," 94.

⁴⁰ See Lillian Kiesler, 166, and Maria Bottero, 176.

⁴¹ In my research, I have typically found some truth in all Kiesler's statements, or if not the truth, at least a reason. Though he may occasionally shift about dates of his early works, every questionable incident, association, or anecdotal comment I researched, even when most doubtful lead to a fascinating truth.

⁴² Frederick Kiesler, "Kiesler's Pursuit of an Idea," interview by Thomas Creighton, *Progressive Architecture*, July 1961, 106.

⁴³ Ibid. 105.

⁴⁴ Ibid. 106, 109.

⁴⁵ See Lisa Phillips, 139. See also Valentina Sonzogni, "Bibliography," 94.