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# PROMETHEUS

## CHICAGO SCHOOLS: AUTHORS, AUDIENCES, AND HISTORY

Edited by Dan Costa Baciu

Journal of the PhD Program in Architecture  
IIT Architecture Chicago

# PROMETHEUS <sup>02</sup>

# PROMETHEUS

Journal of the PhD Program in Architecture

Issue 02  
Chicago Schools

Edited by  
Dan Costa Baciú



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# PROMETHEUS: JOURNAL OF THE PHD PROGRAM IN ARCHITECTURE

## Why *Prometheus*?

*Prometheus* is a peer-reviewed journal that presents research-in-progress developed for the annual student-run symposium organized by the PhD Program of the College of Architecture, Illinois Institute of Technology. Each year, PhD students are selected to serve as editors of the journal. The research featured in each issue is produced primarily by PhD students from IIT and universities all over the world who participated in the annual symposium. It utilizes different methodologies to explore questions related to architecture and engineering, as well as allied disciplines such as design, landscape architecture, and urbanism. Additionally, each issue of *Prometheus* includes an annual overview of the academic accomplishments of our PhD students, plus related activities ranging from our weekly Architecture Research Forum lectures to social events aimed at fostering community.

## Authors

Rahman Azari, PhD, Assistant Professor and former Director of the PhD Program  
*College of Architecture, Illinois Institute of Technology*

Michelangelo Sabatino, PhD, Director of the PhD Program, Professor and former Dean  
*College of Architecture, Illinois Institute of Technology*

Why did we select Prometheus as the symbol and masthead of our journal? He was the irreverent Titan who stole fire to pave the way for the advancement of humankind. From our vantage point in Chicago, we understand that fire is both a tool for destruction and creation. The Great Fire of 1871 leveled the city and provided Daniel H. Burnham and Edward H. Bennett with a reason to devise the Plan of Chicago (1909). Without the fire of modern blast furnaces, the steel girders and supporting beams in our Ludwig Mies van der Rohe-designed S. R. Crown Hall would not have been possible.

As a College of Architecture within a science and technology-rich university, our faculty and PhD students are committed to fostering an environment of interdisciplinary inquiry. Since the early 1940s, research with real-world applications has been produced by our Master of Science Program graduates. Our PhD Program in Architecture was established in the late 1990s as a continuation of the research conducted by MS students in collaboration with faculty. In the intervening years, we have trained researchers who have made significant contributions within academia and in practice across the globe.

We hope *Prometheus* will serve as a platform for emerging researchers who, like the symbol and masthead of this journal, take risks that lead to game-changing innovation at the service of humankind.

We wish to thank Dan Costa Baciu for his efforts as the editor as well as helping organize the symposium scientific parts and coordination with the Chicago Biennial, Daniel Whittaker for his contribution to the organization of the symposium, Melinda Van Leer for her copyediting oversight, and designers Bud Rodecker and Alyssa Arnesen of Thirst.

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# EDITOR'S INTRODUCTION

Any given day in the fall of 1938 must have felt grim and disheartening, the beginning of a story with unforeseeable, dreadful outcomes that inspired a sense of escape, or the wish to stop and start over. In Europe, radicalism gained ground, promoting destruction, terror, and expulsion. Mass hysteria and dogma broke out into a war of sledgehammers and fire. Madness, fear, and fury filled the streets with shattered windows. That fall, immigration rates in the United States peaked despite the wish of the general US public to restrict immigration policies. At the same time, many European and Latin American countries refused refugees.

Turning their back on Europe during that fearful eve of World War II, as part of an unparalleled cultural transfer, the very heart of the European vanguards reached the American East Coast and Midwest. In this process, two major personalities of the Bauhaus framed their educational concepts as Chicago schools: Ludwig Mies van der Rohe arrived in September 1938 to reform the Chicago School of Architecture, and László Moholy-Nagy, who had crossed the ocean in 1937, searched for support to initiate the Chicago School of Design. Ludwig Hilberseimer, Walter Peterhans, and György Kepes followed along. At Harvard, Walter Gropius, who had arrived in 1937 accompanied by Marcel Breuer, was promoted to chairman of the Department of Architecture. This influential position allowed Gropius to call on Sigfried Giedion to teach architectural history.

Gropius and Giedion had met at the Bauhaus in Germany back in 1923, during the heyday of the institute's enthusiastic beginnings. Along with innovative teaching, the 1922 competition entry for the Chicago Tribune Tower might have attracted Giedion's attention. The thirty-five-year-old historian was mesmerized by the school's progressive spirit; and he promoted the Bauhaus with an overly positive article in one of the most regarded Swiss architectural magazines. Five years later, Giedion became general secretary of the newly launched International Congresses of Modern Architecture, a position that he continued holding in 1938 when he left Zurich for Harvard.

## Author

Dan Costa Baciú  
*UC Santa Barbara*

In the menacing light of change, when the European vanguards were searching for a place in the Americas, the Swiss historian and critic wrote down the story of the Chicago school of architecture that had begun the previous century in the context of the expanding construction industry. Giedion's choice of buildings and architects to represent the Chicago school followed a traditional line later continued by his student at Harvard, Bruno Zevi, who wrote that his generation owed their historiographies down to the very examples of architecture and modernism to Giedion. Zevi's Italian book on the history of architecture mentions the Chicago school in terms so similar to Giedion's that it could seem a translation—as Zevi himself acknowledged. Then came Rowe, Tafuri, and many more with them. The vanguards accepted the Chicago school as one of their historical foundations. However, culture and public space are often fought for.

The story of the Europeans is a parallel world to Thomas Tallmadge's Chicago school, whom Giedion nicknamed Tom, but silently disagreed with. Tallmadge had inspired his historiography of the Chicago school from the same sources as Giedion, but he proposed a different view: Prairie houses instead of skyscrapers, and horizontal instead of vertical lines. What ensued seems all the more unpredictable and remarkable. Many, many Chicago schools emerged side-by-side. In the 1960s, this plurality became so overwhelming that historians such as H. Allen Brooks tried to forcibly put an end to it all.

Robert Bruegmann's "myth of the Chicago" school goes into a similar direction. The Chicago school had become a myth. Then again, if one were to accept that the Chicago school is an urban myth, how did this myth form and evolve?

In the 1910s, there was a great deal of interest in the Chicago school. No, not the Chicago school of architecture. Much was written about the Chicago School of Civics, an institution at the University of Chicago that few write about today although it formed one of the roots of the Chicago school of sociology. The Chicago school of architecture was only occasionally referenced to in press around the time, for example when the Art Institute opened its Chicago room, today held in high esteem among historians. Something has changed.

The first century of the Chicago school, from 1850 to 1950, was a period of formation in which Chicago schools competed for public attention and diversified. This, that, and yet the other school followed on each other's heels. Over time, diversity accumulated, reaching, in the 1960s, a threshold to joint breakthrough. People might then have asked each other: Have you heard of this or that Chicago school? Suddenly, one had to specify "Chicago school of commercial architecture," rather than just saying "Chicago school" or "Chicago school of architecture." This process, together with what happened next, is the heart of a new understanding of urban culture that comes out of my dissertation "Everything Called Chicago School." Diversity leads to growth, but growth diminishes diversity. It's all a natural cycle of culture you can read about in Chicago Lecture 1, "The Chicago School: Large-Scale Dissemination and Reception."

Accordingly, some schools lost out during the phase of growth. Among them was the Chicago school of architecture. Although one of the earliest and strongest Chicago schools, the school of architecture has been less prolific in recent decades than the Chicago schools of social science at the University of Chicago that will now have to search for a new sister—because absence of diversity curbs the growth. In a forthcoming article, I have called this phenomenon diversity selection; it may constitute a distinct type of cooperation. Giedion and the avantgarde inspired a spirit of cultural richness in the Chicago school. However, today, where is this spirit? Is it lost forever? We trust not.

The Chicago school symposium was different than the arrival of the German "Avantgarde." The storm was different. It was peer-reviewed and it accompanied the celebrations of the 2017 Chicago Architecture Biennial. Nevertheless, in the esteem of cultural exchange, the symposium brought together students and experts from four continents to enrich the spirit of joint success, and help diversity rebound and generate new growth. *Prometheus* is the continuation of this new tradition.



# SYMPOSIUM OVERVIEW

## **Chicago Schools: November 17–18, 2017**

“Chicago Schools” is an international peer-reviewed graduate student symposium hosted by the IIT College of Architecture PhD Program in partnership with the 2017 Chicago Architecture Biennial. The event is open to the public.

“Chicago Schools” explores the interplay between individuals and collectives in the making of new history. How did authors develop, disseminate, and translate ideas to new disciplines, and how did entire audiences respond to these ideas? The symposium engages with the Biennial theme, “Make New History,” by highlighting graduate student contributions in architectural and art history. Papers revisit past and present Chicago schools, as well as the emergence of new historiographies and architectural traditions within a global context.

Nota bene: Presentation information, titles, and affiliations are reproduced as they appeared in the symposium program in 2017.

### **NOVEMBER 17, CLAUDIA CASSIDY THEATER, CHICAGO CULTURAL CENTER**

**Introduction:** Dan Costa Baciu and Daniel Whittaker, PhD Candidates *Illinois Institute of Technology*  
**Welcome:** Michelangelo Sabatino, PhD, Interim Dean *Illinois Institute of Technology*  
**Keynote: Mapping Chicago History: Looking for Clarity and Complexity:** Gwendolyn Wright *Columbia University*

### **NOVEMBER 18, S. R. CROWN HALL**

**IIT Campus Tour:** Kevin Harrington *Illinois Institute of Technology*  
**Introduction:** Dan Costa Baciu *Illinois Institute of Technology*  
**Welcome:** Michelangelo Sabatino *Illinois Institute of Technology*

### **PAPER SESSION 1**

Authors and Audiences

**Chair:** Joanna Merwood-Salisbury *Victoria University of Wellington*  
**Students:** Caitlin Blanchfield *Columbia University*; Waltraud Paula Indrist *Academy of Fine Arts Vienna*  
**Respondent:** Alla Vronskaya *Illinois Institute of Technology*  
**Discussion Minutes:** Daniel Whittaker *Illinois Institute of Technology*

### **Chicago Lecture 1**

Chicago Schools: A New Synopsis  
Dan Costa Baciu *Illinois Institute of Technology*

### **PAPER SESSION 2**

The First School

**Chair:** David Van Zanten *Northwestern University*  
**Students:** Arezou Khalili *Virginia Tech*; Sara Ebrahim *Arab Academy for Sciences and Technology, Alexandria*; Craig Lee *University of Delaware*  
**Respondent:** John Zukowsky *Independent Scholar*  
**Discussion Minutes:** Pilar Salazar Lozano *University of Navarra*

### **Chicago Lecture 2**

A Dynamic Iconography: György Kepes and the Chicago School of Philosophy  
Michael Golec *School of the Art Institute of Chicago*

### **PAPER SESSION 3**

The New School

**Chair:** Thomas Leslie *Iowa State University*  
**Students:** Zaida Garcia-Requejo *University of A Coruña*; Vasileios I. Chanis *TU Delft*; Pilar Salazar Lozano *University of Navarra*  
**Respondent:** Kevin Harrington *Illinois Institute of Technology*  
**Discussion Minutes:** Marcos Amado Petrolí *Illinois Institute of Technology*

### **Chicago Lecture 3**

Chicagoism: Architecture of an Accelerated Metropolis  
Alexander Eisenschmidt *University of Illinois at Chicago*

### **PAPER SESSION 4**

Hidden Histories

**Chair:** Rolf Achilles *School of the Art Institute of Chicago*  
**Students:** Karl Hakken *Illinois Institute of Technology*; Jan Frohburg *University of Limerick*; Daniel Whittaker *Illinois Institute of Technology*  
**Respondent:** Alison Fisher *Art Institute of Chicago*  
**Discussion Minutes:** Zaida Garcia-Requejo *University of A Coruña*

### **Chicago Lecture 4**

American Urbanism and CIAM  
Eric P. Mumford *Washington University in St. Louis*

### **PAPER SESSION 5**

Transformations and Reinterpretations

**Chair:** Jonathan Mekinda *University of Illinois at Chicago*  
**Students:** Tibor Pataky *Swiss Federal Institute of Technology Lausanne*; Scott Deisher *University of Michigan*; Marcos Amado Petrolí *Illinois Institute of Technology*  
**Respondent:** Alexander Eisenschmidt *University of Illinois at Chicago*  
**Discussion Minutes:** Karl Hakken *Illinois Institute of Technology*

### **Dinner at Unity Temple**

Organized by Daniel Whittaker *Illinois Institute of Technology*

# OPINIONS FROM THE SCIENTIFIC COMMITTEE: A REASON TO RETURN

What can one say about this day of the symposium, hearing what new PhDs and PhD candidates have had to say about Chicago architecture? Some critics might say, haven't we all said enough about Chicago? If you attended the session, you'd know that this isn't true. New people bring new ideas to the subject, in part, because Chicago is important in the history of architecture. I'm reminded that the symposium was organized in partnership with the 2017 Chicago Architecture Biennial. So, what is important about one, is important about the other. Of essential significance is that both brought new faces and new minds to the city. People who came from outside Chicago had the opportunity to experience the city firsthand, form new opinions and reactions to our environment, and take those impressions back home with them. One may never really know how their visits will impact them, but I'm certain that there will be something, and I hope their experiences will be positive. Who knows, one of the symposium presenters or Biennial participants might provide future generations with a new way of looking at Chicago architecture, clearing a path for one of their successors. Like a recurring Biennial, hosting regular "Chicago Schools" conferences can only be good, for us and them.

## Author

John Zukowsky, PhD  
*Independent Scholar*

# HISTORY WRITING MOVES ON

If a city can represent an idea, Chicago has long represented modernity. As the organizers of this symposium noted in the call for papers, beginning in the late-nineteenth century the city formed a nucleus for emerging modern theories across various disciplines, from architecture and psychology to sociology and economics. For many years, the value of the Chicago school of architecture was that of prescience: It was seen to foreshadow a universal modern condition yet to come, a modern way of building, working, and living to which all people and cultures would aspire. Since the 1960s, however, some historians have challenged the idea of modernity, minutely examining it for signs of instability, internal contradiction, and imminent failure.

In the field of architecture, ideas of stylistic evolution and artistic expression have been replaced with socio-economic determinism. Master figures and masterpieces have been supplemented by the "recovery" of figures and projects overlooked in the canon. The heroic view of modern technology has been reconsidered and replaced within emerging frameworks of capitalism and globalization. Ideas of functionalism were replaced with concepts of signification. In this process the agency of a largely unseen and partially cohesive collective has displaced the agency of the individual, the lone genius, in the process of architectural creation and production.

Yet in Chicago, with its highly developed economy of architectural tourism, the collective spirit and the mythology of the Chicago school of architecture lives on. As Roland Barthes observed, like other cultural mythologies, it has assumed a cultural role so powerful that it cannot be overcome. Perhaps we find it reassuring to think we can make sense of the complex social, technical, economic, and political forces that made up modernity when it is laid out before us in an understandable (and consumable) urban landscape? It is surely comforting to imagine that this landscape has a unified aesthetic, an observable style created by nameable authors, which we can claim as a major cultural achievement? It is precisely these assumptions, and the persistence of the myth of the Chicago school, that renders the work of the historian imperative.

The papers presented in this symposium contribute to the ongoing work of understanding why the idea of the Chicago school continues to resonate. While acknowledging the centrality of the myth to the history of our discipline and to popular history, they challenge its homogeneity, stability, and continuity. In the process, new historiographical themes and systems of knowledge organization emerge, and new methods of working and areas of attention are revealed. Most of all, the practice of history writing moves on.

## Author

Joanna Merwood-Salisbury  
*Victoria University of Wellington*

# QUESTION: A BEHAVIORAL STUDY OF ARCHITECTURE?

The ease with which we perceive architecture stands in sharp contrast to its formal richness, but how is it that the same thing can be easy and difficult at the same time? Take the case of Louis H. Sullivan's ornament (figure 1): Within the blink of an eye, your brain takes in and reads a mind-blowing vocabulary of shapes, contours, crossing lines, and surfaces, which are each complex enough to fill a voluminous treatise of art. Yet, only a few of the visitors of this marvelous architecture ever needed a book to see what they saw. Sullivan's theoretical work, "The Tall Office Building Artistically Considered" (1896), certainly adds meaning to ornament, but wouldn't it be interesting to know what the brain's first steps are when interpreting architecture? Did Sullivan maybe sense the hidden workings of the brain, foretoking later neuroscience in his early theory? Or were the German gestalt psychologists the first to ask questions of phenomenology in the twentieth century?

Regardless of how you answer, maybe the twenty-first century will eventually bring new technologies that will allow us to address the matter directly and scientifically. It is already easy to track eye motion, and it is inconvenient but possible to record and visualize the hidden workings of the brain. Not all laboratory methodologies can be deployed outside the lab, but maybe the time will eventually be ripe to experiment in the real world in Sullivan's original architecture. Then what will happen next? Will a new perspective be introduced, additional to the historian's? Will knowledge of the brain's hard-wired interpretation of visual, geographical, and other sensory information help preservationists and historians praise and appraise architecture? Let us imagine that we would study the Sullivan Center in downtown Chicago. Would this not be the beginning of a new behavioral study of history, similar to the behavioral study of economics pioneered by Dan Ariely of Duke University or Richard Thaler, the 2017 Nobel Prize recipient from the University of Chicago?

## Authors

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Figure 1: Sullivan's ornament on a rainy day.  
(Source: Dan Costa Baciu.)

# CHICAGO LECTURES

The Art Institute of Chicago, circa  
1904-1910. Photo by Barnes-Crosby Co.,  
courtesy of Chicago Historical Society  
(ICHI-19219).



# THE CHICAGO SCHOOL: LARGE-SCALE DISSEMINATION AND RECEPTION

## Abstract

The Chicago school of architecture is the theme of this symposium publication, yet, is this theme not a Gordian knot of history that one can only tighten and never unwind? Since the 1960s, many architectural historians have felt frustrated when interpreting the meaning of the term “Chicago school” because it seemed fragmented and too ambiguous. However, would this seemingly troubling ambiguity not be a significant and all the more interesting phenomenon to study? How does such a world of parallel variants and alternatives come into existence? Is history shaped by just one or by multiple simultaneous authors, and by the changing tastes of their audiences? In this lecture, I attempt to answer exactly these questions. The lecture revisits the meaning of the term Chicago school in the public discourse, and it proposes a new theory to interpret questions of ambiguity, polysemy, and semantic change. How did writers and readers shape the meaning of the Chicago school? And why did the term persist and prevail undisturbed by historical breaks? In light of the new theory, it can be concluded that the Chicago school did not rise to fame because someone in the nineteenth century foresaw the future, but because large-scale dissemination and reception transforms individual creativity into collective strategy.

## Author

Dan Costa Baciú  
UC Santa Barbara

## 1. Historical Re-Evaluation: A New Synopsis of the Chicago School

Chicago’s most rapid urban growth dates back to a time in US history when the university landscape, shaken by business cycles and political crises, awakened in a quest of self-determination that made the universities fertile ground for the emergence of new academic traditions and new schools of thought. Many American students still crossed the Atlantic to secure themselves the privileges of European degrees. But in the US, new educational programs were founded all over the place, often sponsored by entrepreneurs who made their fortunes with practical, though unlikely, inventions. Reapers and refrigerator cars told unexpected stories about the American cities of immigrants, the Great Lakes, planes, rivers, and the gold-rich slopes along the Pacific coasts. Discovering America was more than explorers sighting new lands from a caravel that crossed the oceans. What seemed a 15th century dream come true had beautiful as well as dreadful consequences that no individual fully comprehended. This sense of collective discovery, independence, and learning is the spirit in which the Chicago school was born.

Already in 1850, physicians spoke of a Chicago school. The small city of less than thirty thousand inhabitants had gone through dreadful epidemics that left behind a desire for improvement. The board of health was established, and so were the first medical programs. The city needed more trained physicians. However, the medical establishment of the East did not always approve of the Western developments. Chicagoans defended themselves explaining that they had adapted academic standards to pressing social needs. The “Chicago school,” as these advocates called their emerging school of thought, was an attempt to address real-world problems that, in the eyes of the Midwesterners, were insufficiently recognized elsewhere.

Because of tensions between the East and the West, Chicagoans often stressed the uniqueness of their environment. However, as mentioned before, the zeitgeist of the Chicago school was also present in the broader American and European context. For example, Chicago was occasionally personified as a young city in its pains of growth. Youth symbolized formation, imperfection, and a sense of adventure, and it did so much beyond Chicago, especially just after the Civil War. Mark Twain and Howard Pyle enjoyed great success in the 1870s and 1880s when they experimented with the literary genre of the bildungsroman, a type of novel that recounts the formation of a young protagonist. Their major pieces—*The Adventures of Tom Sawyer*, *The Adventures of Huckleberry Finn*, and *The Merry Adventures of Robin Hood*—featured street children and young outcasts as their protagonists, who, although portrayed as heroes, were far from being flawless. Around the same time, Winston Homer’s aquarelles, many of which depict children, were among the most inspiring works of American art. Henry James, the famed writer, critic, and brother of William James

## Notes

1. *Chicago Times*, “Architectural,” 9.

whom we will encounter in a moment, detested Homer for his little girls in sunbonnets, but he lauded the drawings for their sense of realism. Maybe the aquarelle, with its hasty technique, was itself a medium immediately suited to represent imperfection, for which Homer was initially criticized but later beloved. Around the same time in France, impressionist artists used heavy brushstrokes in their paintings to break contours and render life as eternal change. And in Britain, Charles Darwin and Alfred Russel Wallace’s theory of evolution explained that life is nothing but eternal formation, imperfection, and struggle for existence.

How, then, did these ideas of endless youth and formation shape Chicago’s schools of thought and architecture? The meaning of the term “Chicago school” itself evolved over the course of time, and no philosophy or architectural style is its final expression. In 1879, a local newspaper speculated: “Before Chicago attains a complete success in architecture, it must have a school of its own.”<sup>1</sup> Yet, neither the school was immediately established, nor was it clear what ideas it would eventually embody. For an entire decade, until 1889, the Chicago Sketch Club repeatedly attempted to establish an educational program in architecture, for example at Northwestern University. Dankmar Adler, partner at Adler & Sullivan, was present at one of the Sketch Club’s decisive meetings, the proceedings of which have survived in the pages of a newspaper. He asserted that the funding for a school of architecture was unachievable.

Somewhat independent from the Sketch Club’s efforts, Louis Millet, whom Adler & Sullivan employed for the interior of their famous Auditorium Theatre, taught architecture at the Art Institute of Chicago beginning with 1886. His classes laid the foundation for the educational program that was called the Chicago School of Architecture in 1893. The name was discontinued only half a century later, in 1939, a year after Ludwig Mies van der Rohe came to Chicago to reform the program. We shall return to this event later in this section. Back in the 1880s and 1890s, Chicago’s architects finally succeeded in their longstanding goal of establishing a new school of architecture. Alas, was this program doomed to be inferior to Paris, MIT, or nearby Urbana? What did Chicago uniquely offer?

Witnessing the construction boom and the educational efforts of the 1880s, the architect and critic Henry Van Brunt addressed these questions in a lengthy article.<sup>2</sup> He endorsed his Midwestern peers for their office and theater buildings, calling their design approaches an emerging “school” of international reputation. Among the builders that Van Brunt mentioned by name, one can find many of the great firms that erected early Chicago skyscrapers: Burnham & Root, Adler & Sullivan, Holabird & Roche, etc. In particular, Van Brunt lauded their many tall office buildings and theaters, such as the Auditorium Theatre, to which Millet had contributed interior decorations so important to bring art closer to the masses of spectators. As in previous decades, Chicago’s school again was an answer to social needs. This time it was the human need for architecture and culture, rather than medicine.

Van Brunt explained in his essay of 1889 that the international merit of Chicago’s “school of architecture” was grounded in the local circumstances and in new approaches to design. Firms in and around the city united art and technology in a way unthinkable in the East. Later, Louis Sullivan theorized abundantly on this problem. With his dictum “form follows function,” Sullivan initially proclaimed the need for a synthesis of art and technology in the presence of newly emerging social needs.

Sullivan’s ideas were also inspired by the theory of evolution, so popular around the time. Architects in the late-twentieth century often missed this point, yet it was the theory of evolution that instilled the wish in Chicago’s architects to overcome the dichotomy of art and technology. For architecture to be a lively art in a lively society, as Van Brunt and Sullivan desired, architecture had to evolve, like nature evolved, from a process in which there was little need to distinguish between art and technology.

Liveliness in this context meant interplay, joint authorship, and inspiration drawn from vernacular architecture. Life was not to be searched for in individuals in isolation, but in communication, exchange, and dispersed knowledge. At multiple instances in his text, Van Brunt praised the work in the Midwest as an “unconscious” product of civilization.<sup>3</sup> Design in Chicago involved draftsmen, interior designers, investors, builders, and users alike. In other words, design relied on decentralized decisions, which made the new architectural style unconsciously evolve on its own.

Besides evolution as a source of unconscious change, the interest in the unconscious may also have been grounded in William James and Sigmund Freud’s contemporary appreciation of unconscious brain processes. No wonder, the unconscious seemed so intriguing to Van Brunt. In a nutshell, Chicago’s school was a synthesis of theory and practice, and it solved tensions between individuals and collectives in the light of a modern view of life.

Over the course of time, these early foundational ideas came to form the common ethos of the Chicago school. In 1939, fifty years after Van Brunt published his essay, Sigfried Giedion’s historiography of the Chicago school built on this same set of ideas. Giedion, as well as his student and historian Bruno Zevi, posited that the Chicago school first overcame the dichotomy of art and technology on an urban scale.

Another fifty years later, in 1989, Friedrich Hayek’s ideas about dispersed knowledge fueled political change that led to the fall of the Berlin wall, as well as numerous revolutions in the countries politically dominated by the former Soviet Union. Hayek had taught and researched in Chicago during some of his best years, and his ideas about dispersed knowledge found good substance of research in the city. After all, Van Brunt’s work shows that Chicago’s history makes dispersed knowledge very much visible to the naked eye. Maybe then, the Chicago school is unique in its sustained attempts to explain self-organization. Over the course of a century, from architecture to politics, and from the United States to Europe and beyond, the foundational ideas of the Chicago school were iterated, reiterated, and reinterpreted across the disciplines.

### 1.1 Struggles for Existence

The history of the Chicago school was never fully foreseeable ahead of time and does not go without dissent and drama, just like evolution does not go without trial, error, and competing variants. In 1939, Sigfried Giedion held the view that the World’s Columbian Exposition of 1893 had been a dull episode for the Chicago school. This interpretation had its own historical roots and sheds new light on debates surrounding the Chicago school.

Daniel Burnham, one of the most influential architects of early skyscrapers, became the master architect of the World’s Columbian Exposition. However, after the untimely death of his office partner, he radically departed from the foundational ideas of the Chicago school. Instead of letting an architectural style evolve on its own, as it had evolved in the city, Burnham decided to impose a style that reconfirmed the dominance of the Parisian Academy of Fine Arts.

This decision seemed a break with the spirit of the Chicago school. A newspaper editor mocked in 1893 that the practitioners of the “Chicago school of architecture” were not chosen to build the exposition.<sup>4</sup> Van Brunt agreed, he wrote the same year that the “new school” was to be found in the city, but not at the fair.<sup>5</sup> Finally, William James wrote to his brother that he decided not to visit the Chicago fair although everyone seemed crazy about it. Later, the letter was prominently published on the last page of James’s first volume of correspondence.<sup>6</sup>

Despite the Chicago fair, Van Brunt’s school was not abandoned. A.D.F. Hamlin, the first lecturer in architectural history at Columbia University, mentioned the Chicago school in all of the five reprints of his textbook that appeared

2. Van Brunt, “Architecture in the West,” 772-784.

5. Van Brunt, “Architecture at the World’s Columbian Exposition — III,” 88.

3. Van Brunt, “Architecture in the West,” 772-784.

6. James, *The Letters of William James in Two Volumes*, 348.

4. Abbot, “The Makers of the Fair: A Family Paper.”



Figure 1a: A.D.F. Hamlin’s “Chicago School.” From left: Fisher Building, Chicago; Guaranty Building, Buffalo; Majestic Building, Detroit. (Source: Ryerson and Burnham Archives, the Art Institute of Chicago.)

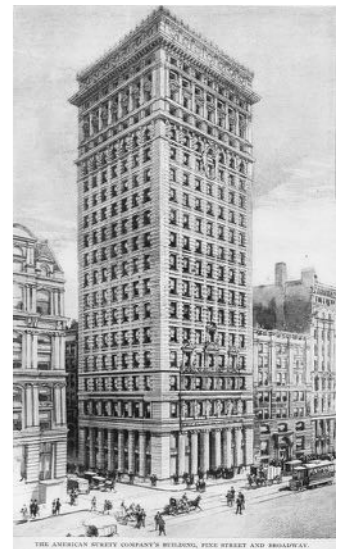


Figure 1b: A.D.F. Hamlin’s “Eastern School.” From left: Ames Building, Boston; Broadway Chambers Building, New York; American Surety Building, New York. Compared to the Eastern School, the buildings of the Chicago School were more utilitarian, with vertical lines rising from the street level all the way up to the roof. Hamlin praised this as a bold design solution. (Source: Ryerson and Burnham Archives, the Art Institute of Chicago.)

between 1900 and 1907.<sup>7</sup> Hamlin was born in Turkey to American parents, which gave him an international background. His textbook of the history of architecture was originally published in 1896, but Hamlin kept it up-to-date during his entire career. His textbook was the first and, for many years, also the best such work written in the United States. It played a role similar to Giedion's *Space, Time and Architecture* three decades later. The book culminated in a series of chapters on modern American architecture, and its potential international significance.

In these concluding chapters of Hamlin's textbook, the term "Chicago school" appears in the context of tall office buildings. A group of Midwestern practitioners successfully integrated the engineer's work in the façades of their high-rises, as opposed to the "Eastern school" that focused on artistic expression in the tradition of the Parisian Academy of Fine Arts (figures 1a–b). The Midwest emanated the aura of artistic freedom and of a central place in the middle of the continent that amalgamated trends and allowed architects to experiment with new, promising, and useful solutions. Later, the Chicago architect and architectural historian Thomas Tallmadge wrote that Hamlin opened the eyes to countless students, and that his book became influential in establishing the study of modern architectural history at American universities.

Hamlin was indirectly connected to Van Brunt through William Ware, Van Brunt's first office partner (and William James's acquaintance from Harvard). Ware founded the first program in architecture in the United States at Massachusetts Institute of Technology (MIT). Later, when Ware left Massachusetts for New York to start a new program in architecture at Columbia, he employed Hamlin, his former student from MIT.

At Columbia University, Hamlin taught architectural history while Ware taught design. And Hamlin's textbook of architectural history can be seen as the counterpart to Ware's manual on architectural rendering. Ware held that the work of architects was "midway" between that of artists and engineers. Maybe midways and syntheses were what made American education productive beyond Chicago. In comparison to Paris, where students learned to draw exquisite aquarelles, at Columbia, exuberant artistry was sometimes associated with deceit. In America, the drawings of successful students may have had more of the freshness of Homer's watercolors around the same time, although accuracy and science were highly valued. Hamlin not only loved watercolors (figure 1c), but also wrote an article that explains how to draw accurate shadows.



Figure 1c: One of many watercolors of vernacular architecture by A.D.F. Hamlin. (Source: Avery Library, A.D.F. Hamlin Papers.)

Hamlin may also be regarded as an exceptional thinker when it comes to using data to evaluate trends in architecture. In 1900, he used a survey in an attempt to understand which was the architectural style favored by the general public. It seemed that all styles were almost equal in this respect. Of course, Van Brunt, Ware, and Hamlin had their personal preferences when they built. They frequently chose a Romanesque close to the precursors of the Chicago school. Hamlin, though, devoted most of his time to teaching, in particular to teaching history.

Three decades later, Sigfried Giedion confirmed the relevance of architectural history for a new generation of practitioners and urban planners that had previously attempted to break with the past. Even more frequently than Hamlin, Giedion lectured and wrote on the "Chicago school" claiming that it was the first large synthesis of art and technology.

Giedion never met Hamlin, who passed away in 1926. The story is also somewhat complicated by the fact that Hamlin discontinued using the term "Chicago school" in his textbook after 1908. That year, Thomas Tallmadge came up with his divergent definition of "Chicago school," while Hamlin wrote his article "The Influence of the Ecole des Beaux Arts on [American] Architectural Education."

Although Hamlin credited the influence of the "French school" on what he collectively called the "American school," he witnessed that the French school was no longer true to its origins. The term "Cartouche architecture" had become a common byword in New York, standing for heartless decoration. The American line of "scientific" architecture had outgrown the French school, so Hamlin wrote, predicting that a time would come when it would be the turn of the French students to cross the Atlantic and experience the American freedom of spirit, design, and science. Giedion quoted this article at a critical point, making it doubtless that he knew of "Prof. Hamlin."

It is all the more striking that architectural historians have never considered Hamlin a potential source for Giedion. These historians forgot that Hamlin had written about the Chicago school between 1900 and 1907, and that Tallmadge wrote that the idea of the Chicago school had come from the East, which gives Hamlin additional relevance as a source.

In addition, in January 1939, the famous preservationist Charles E. Peterson put Giedion in contact with Talbot Hamlin, A.D.F.'s son who, like his father, was a professor at Columbia. The younger Hamlin established the Avery Index and wrote his own textbook of architectural history. Giedion and Hamlin, and their wives, became lifelong friends.

Giedion's first public talks provided a well-chosen palette of early high-rises. His later lectures sometimes focused on Adler & Sullivan's Auditorium building, mentioned before (figures 2a–b). An enormous structure for its times, the Auditorium building was simultaneously a theater, hotel, and office building. It was a home for the arts and an early skyscraper. Art and technology were physically united.

7. Hamlin, *A Text-book of the History of Architecture*.

8. Giedion, Letter to Holabird and Roche.

9. Giedion, "Sullivan's Prophecy," in *Space, Time and Architecture*.



Figure 2a (from top): Adler & Sullivan, Auditorium building, Chicago 1889; Adler & Sullivan, Schiller building, Chicago 1892. (Source: Ryerson and Burnham Archives, the Art Institute of Chicago.)

During his first stay in Chicago, Giedion visited many buildings, companies, and institutions, and he spoke with historians and architects alike. If his notebooks are correct, he met at least one hour with Tallmadge and nicknamed him "TOM." The local historian had departed from Hamlin's Chicago school. He did no longer use the term for skyscrapers, and in this matter, Giedion silently disagreed.

Consequently, Giedion also disagreed with the National Council of Architectural Registration Boards (NCARB). The NCARB mailed a letter to Giedion stating that his and his friend Moholy-Nagy's use of the term "Chicago school" was a "monumental error."

There is also a forgotten letter that tells us whom Giedion truly agreed with.<sup>8</sup> At Holabird & Roche (by that time renamed to Holabird and Root; I continue using the previous name for convenience), Giedion spoke to Frank D. Long, an architect who was well informed about the Chicago World's Fair of 1893. Long moved to Chicago about 1891, at age 26, after studying architecture at the University of Illinois. He initially worked for the Chicago fair and later continued a lifelong career at Holabird & Roche, passing away only a few months after Giedion met him.

Naturally, Giedion chose to trust this elderly Mr. Long (the first name is not mentioned) and not the younger Tom, or the even younger NCARB, for that matter. The exchange between Long and Giedion explains, in one single stroke, many open questions that hitherto remained unanswered as Giedion's letter to Long lurked among countless Giedion papers at ETH Zurich on the other side of the ocean. And Long, who had passed away before answering the letter, had no followers other than Giedion.

Long's view was close to Van Brunt's in that he believed that the fair was not representative of the Chicago school. To support this position, which did not seem obvious to everyone in 1939, Long cited the passage in which William James wrote to his brother that he did not wish to visit the Chicago fair. The passage substantiated that Long was not alone to despise the architectural style of the fair.

In a follow-up correspondence, Giedion thanked Long for presenting his view of the "Chicago school," and he asked for the source of the quotation; Giedion was impressed that Long, an elderly architect by that time, had quoted James from memory. This encounter convinced Giedion, who wrote in his letter: "I very much enjoyed your personal touch in telling me the history of the Chicago school." In December 1938, Giedion did not use the term Chicago school for Chicago's early skyscrapers. After meeting Long in January 1939, he did.

Evidently, during his exchange with Long, Giedion chose the term "Chicago school" and made up his mind on what the school's most important values were. Later, in *Space, Time and Architecture*, Giedion recounted his Chicago encounter:

"While I was in Chicago, one architect, [here first reconstructed as Frank D. Long], who had worked on [the Chicago fair] quoted from memory the rather ironical comment of William James: 'Everyone says one ought to sell all one has and mortgage one's soul to go [to the fair ...].' [...] The lonely American voices raised against the unexampled seduction of the public taste underlying the Fair's pseudo-splendor went unheard."<sup>9</sup>

Long had passed away by the time these lines were published, but his voice was no longer unheard. It is through Long that Giedion quoted William James in *Space, Time and Architecture*. The words and punctuation were accurately taken from the last page of James's first volume of correspondence.

Giedion's notebooks, agenda, and letters give a good insight into his activities in Chicago, but it is all the more important to remember that the city looked very different during those years. The largest group of recent skyscrapers dated from the 1920s, and they were built in a style that somewhat continued the legacy of the Chicago fair and the Parisian

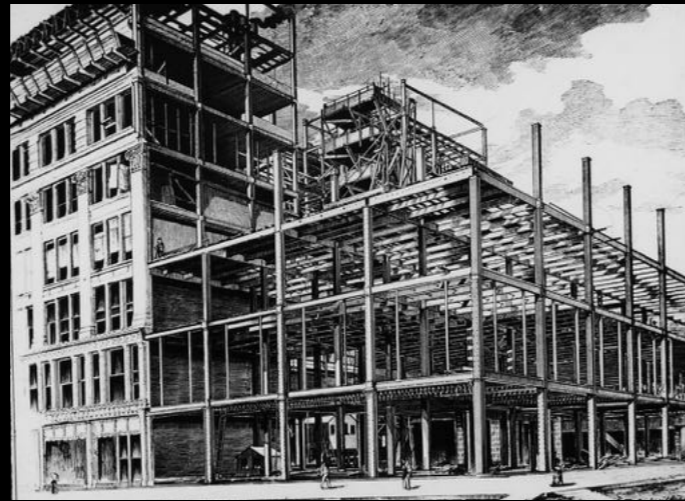


Figure 2b: Sigfried Giedion lecture slides for the Chicago school. (Sources: Ryerson and Burnham Archives, the Art Institute of Chicago; and Sigfried Giedion's *Space, Time and Architecture*.)



Academy of Fine Arts that Giedion had criticized in his previous essays written in Europe. In this urban context, the earlier skyscrapers appeared more modern, and more American. Though in reality, they were more dated.

When the Century of Progress fair took place in Chicago in 1933, New York's newly established MoMA noted this curious anachronism and praised the early skyscrapers for their modernity. At MoMA, Philip Johnson and Henry-Russell Hitchcock based their work mostly on Tallmadge's research. Thus, the term "Chicago school" was not used for the skyscrapers. Instead, Johnson preferred the term "skyscraper school of modern architecture."<sup>10</sup> This term is also in line with MoMA's "international style." Both avoid binding history to geographical places. The "Chicago school" occasionally mentioned by the MoMA curators was mostly Tallmadge's school.

Giedion's historiography differs from the MoMA in that he returned to the term "Chicago school," as Hamlin originally used it. Nevertheless, he further substantiated Johnson and Hitchcock's line of thought by asserting that the modernist skyscraper designs of Walter Gropius and Mies van der Rohe unconsciously continued the trajectory of the earlier Chicago skyscrapers. A MoMA press release had pictured the transition from brick to steel skyscrapers in Chicago (figure 3). Giedion discussed a similar transition, though from a more artistic perspective (figure 4).

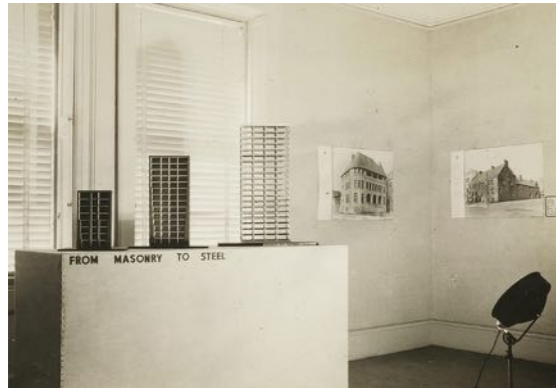


Figure 3: Masonry and Steel Skyscraper Models at MoMA. (Source: Philip Johnson and Henry-Russell Hitchcock, *Early Modern Architecture: Chicago 1870-1910*. New York: The Museum of Modern Art, January 18-February 23, 1933.)

The connection that Giedion made between art and technology becomes rather complex in this context, stretching with Giedion's career across the Atlantic. There were multiple obvious, as well as hidden artistic links between Europe and the Chicago school. Earlier in Europe, Giedion had written about the Bauhaus, lauding the institution for its attempts to unite art and technology. In 1939, this very Bauhaus was shattered by war and moved to America: Giedion's friend Moholy-Nagy attempted to establish a new Bauhaus in Chicago, and Mies had just been employed to reform Chicago's only educational program, namely the Chicago

10. Johnson, "The Skyscraper School of Modern Architecture."

School of Architecture. The Chicago school had long attempted to unite art and technology in the United States. Maybe this fact would serve the immigrants. Moholy-Nagy's Chicago Bauhaus eventually became the Chicago School of Design. One should also remember that Mies had been recommended by John A. Holabird, son of William Holabird, the founder of Holabird & Roche, an office featured in Van Brunt's article, and where Giedion spoke with Long. Thus, the connection that Giedion made between the European "Avantgarde" and the Chicago school and between art and technology had a deeper meaning.

Mies's call to Chicago was also based on recommendations from architects such as David Adler. It might be interesting here to juxtapose the creative use of the baroque axis at Castle Hill and Giedion's book cover for *Space, Time and Architecture* that also makes creative use of the same motive of landscaping (figure 5). The spirit of modernization and modern art was not unique for the artists, designers, architects, and immigrants of the European Avantgarde.

Although Giedion tried to assimilate, he nevertheless perpetuated existing controversies. Not everyone agreed with his and Long's view of the Chicago fair. And since Hamlin's days, the meaning of the term "Chicago school" had changed. In addition, not everyone liked immigrants, and there were other more tedious contentions.

One debate emerged from Giedion's choice of expensive glossy paper. The efforts he had undergone to collect the photographs (especially in Chicago) seemed to him worth the expense, but as a consequence, the book became much more expensive than regular Harvard productions, and this happened at a time of scarcity and war. Curiously, later historians forgot about this historic controversy and posited that Giedion could only make his argument about architecture and flat surfaces credible because the photographs were not good enough.

Precisely because of these controversies and partisanship, Giedion's point about art and technology merits more elaboration. Next to the Bauhaus, the influence of the Vienna school is most palpable. For Giedion, such influences were obvious. He was born in Prague, lived in Switzerland, studied in Vienna, and traveled through Europe. Giedion's work represents an international perspective that is not easy to comprehend but is nevertheless fascinating.

The Vienna school of art history and the Vienna Circle are not only contemporary to the early Chicago school, but, like the Chicagoans, the Viennese thinkers with their progressive worldviews saw art and art history as inseparable from science and exact thinking. Thus, the flat surfaces and clean lines of modernist architecture were not regarded as mere application of technology, but as a synthesis of art and technology (figure 6).

At Harvard, George K. Zipf wrote an article that was meant, in 1950, to continue this line of thought of the Vienna school. Giedion received the article already as a draft and read it.

Furthermore, the historical connections between Chicago and Vienna are not just abstract but also physically present through architects such as Adolf Loos and R. M. Schindler as well as later social scientists such as Hayek.

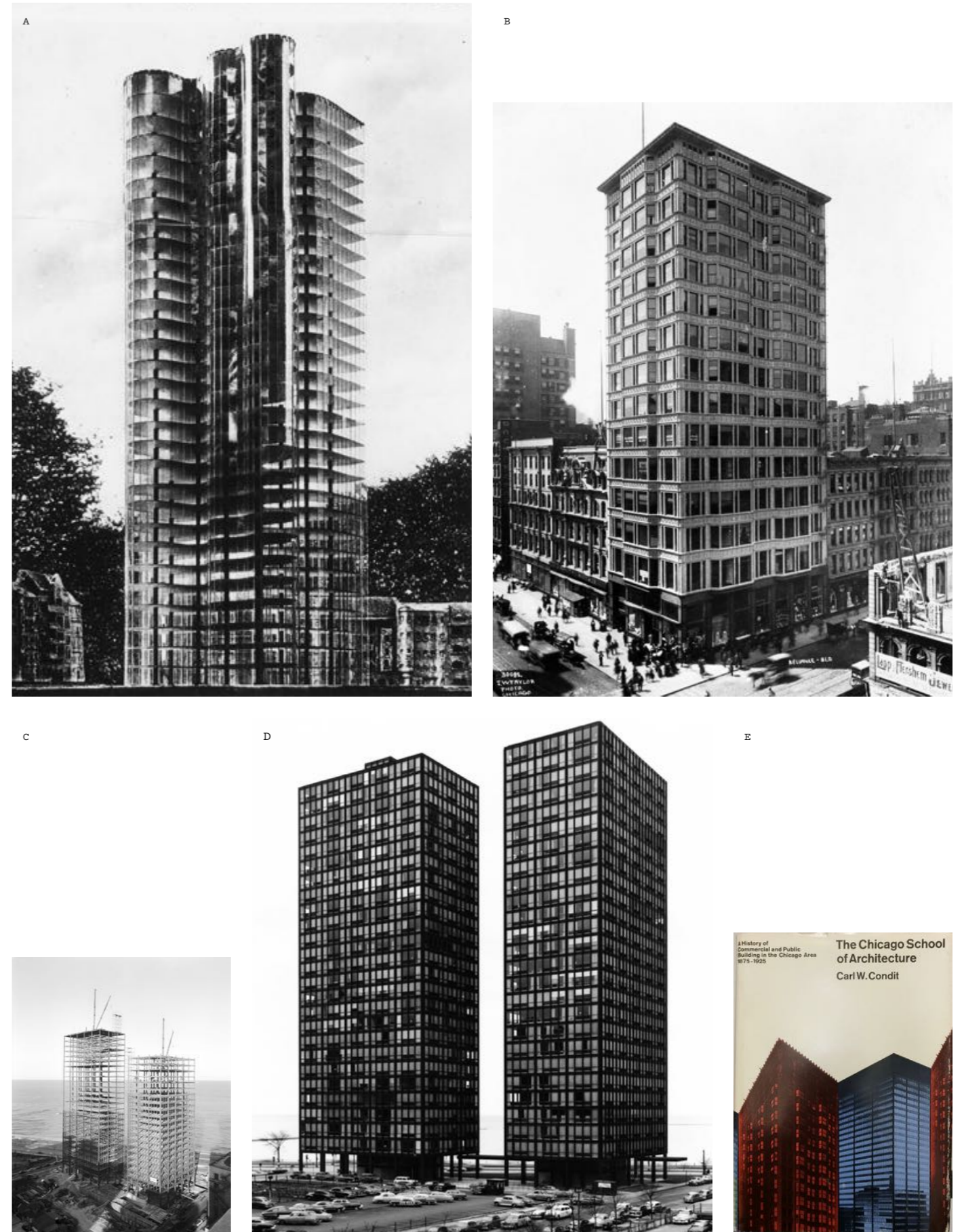


Figure 4: From the Chicago School to the Avantgarde. A) Early Avantgarde Project of Steel Skyscraper by Mies van der Rohe. (Source: Sigfried Giedion, *Space, Time and Architecture*. Also used by Giedion as lecture slide.) B) The Swan Song of the Chicago School. (Source: Ryerson and Burnham Archives, the Art Institute of Chicago.) C) Lake Shore Drive during construction. (Source: Chicago History Museum.) D) Chicago Lake Shore Drive by Mies van der Rohe. (Source: Ryerson and Burnham Archives, the Art Institute of Chicago.) E) Book cover of Carl Condit's *The Chicago School of Architecture* featuring the Reliance Building, from Giedion's Library. (Source: ETH Zurich, GTA Archives, Sigfried Giedion Estate. Image by the author.)

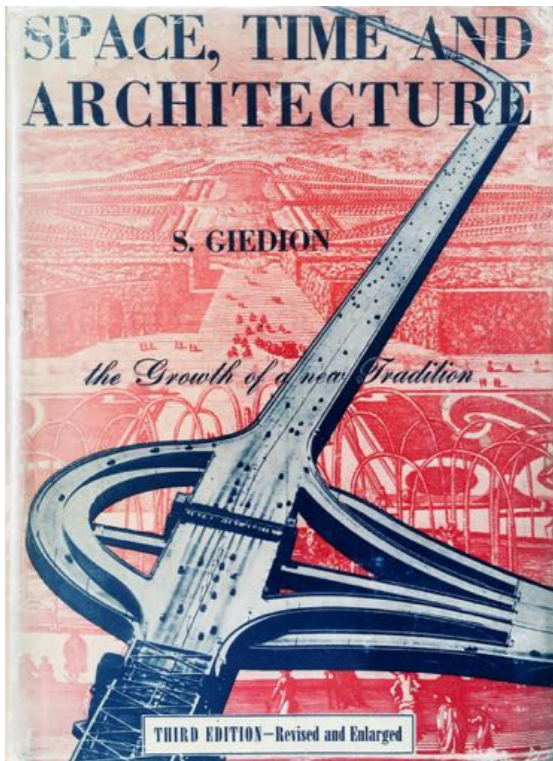


Figure 5: Undulating Baroque Axes. Top: Castle Hill with baroque axis and blue ocean, landscape by the Olmsted brothers; architecture by David Adler (Source: Wikipedia). Bottom: Book cover for Sigfried Giedion's *Space, Time and Architecture* with a baroque axis in red superimposed by a blue, curved highway (Source: Herbert Bayer cover for Sigfried Giedion's *Space, Time and Architecture*. Photo by the author).

The Chicago and Vienna schools illustrate that Mies's own writings expand upon a broader cultural context. His opening address at the Chicago School of Architecture, as the institute was still named at the time, dealt predominantly with his wish to unite art and technology. As already mentioned above, such views were debated but not unknown. Straight lines and flat surfaces were also present in other contemporary American works, such as the transformation of a post office building into the Santa Barbara Museum of Art completed by David Adler in 1941 (figure 7). Adler, as mentioned before, was one of the figures to propose Mies for Chicago.

Late twentieth- and early-twenty-first-century historians sometimes disregarded this historical context and frequently wrote that Giedion was primarily interested in technology. Likewise, Sullivan's "form follows function" lost its artistic dimension in certain circles of architects, investors, and engineers, (see also Michael Golec's lecture in this same volume). Then again, a Chicago-based writer recently returned to the older imagery, calling the Chicago school "a marvelous mix of reality and romance."<sup>11</sup> Thus, it can be said that the history of the Chicago school really was eternal youth, formation, and struggle. In addition, the connections between Europe and America, when it comes to synthesizing art and technology, are so vast, that they would easily break the format of this present article.

Back in 1941, Giedion let his research flow into a chapter of *Space, Time and Architecture*, which despite the debates, became his most hailed and frequently reprinted book. Carl Condit, a historian at Northwestern University, created a whole new book, and then an expanded book, out of Giedion's chapter (figure 4d). And in this context, again, the term Chicago school acquired new senses.

In 1952 and 1954, Condit and Giedion witnessed a new construction boom and started speaking of a newer "new school," (Van Brunt had already used the phrase "new school" in 1893). Ludwig Hilberseimer, who had followed Mies to Chicago and whose project for a skyscraper city in 1924 could be seen as a European counterpart of the Chicago school, also continued along those lines. Other significant contributions came from Colin Rowe and, in Italy, from Manfredo Tafuri, who might have been inspired by Bruno Zevi. The connection to Italy might also have been strengthened by Condit's book, published in Italian under the title *La Scuola di Chicago: Nascita e Sviluppo del Grattacielo* [The Chicago School: Birth and Development of the Skyscraper]. Around the same time, Condit gave his auspices for the establishment of the Chicago School of Architecture Foundation—yet another new Chicago school.

As the many Chicago schools evolved side-by-side, heterogeneity and ambiguity accumulated. But was this endless formation beneficial or detrimental to the Chicago school at large?

11. Pridmore, "Chicago Architecture." 12. Howells, "Certain of the Chicago School of Fiction," 740-746.

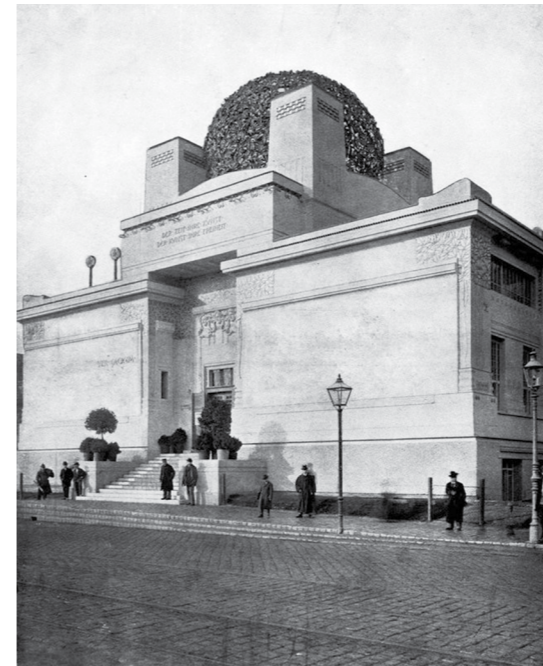


Figure 6: The Secession Building, Vienna. The front is left blank, while the sides and back of the building are decorated. (Source: Bauindustrie-Zeitung 1899-1900.)



Figure 7: Top image is Oscar Wenderoth and Francis Wilson Postal Office, 1914. Bottom image is remodel by David Adler to Santa Barbara Museum of Art, 1941. (Source: Santa Barbara Museum of Art.)

## 1.2 New and Newer Schools

Already during the time of A.D.F. Hamlin's "Chicago school," the term found a number of new applications that remain in use today. William James, the Eastern academic who did not travel to Chicago to see the World's Columbian Exposition, adapted the idea of the Chicago school to the work done under John Dewey at the University of Chicago.

In 1903, the Department of Philosophy celebrated its decennial with a publication that Dewey, as the department's director, dedicated to James. The latter responded with an essay aptly titled "The Chicago School." In James's words, the Chicago school was a "via media" between transcendentalism and pragmatism. Thus, the famous philosopher continued and broadened the common ethos of earlier Chicago schools as midways and syntheses. The Chicago school solved tensions between theory and practice, and between individuals and society.

James's work and personality inspired many later Chicago schools directly and indirectly. The Chicago School of Civics and Philanthropy was founded in 1908 at the University of Chicago, where it aimed to unite social work with social theory. The school became famous in the ensuing two decades, continuing some of the earlier work of the Hull House on a more academic and theoretical background. The Chicago schools of social science and symbolic interactionism are unthinkable without this history.

Around this time, Robert E. Park, who studied under James at Harvard, became a founding figure for the Chicago school of sociology. When he was appointed at the University of Chicago, Park made his name by showing that much of Chicago's urban growth was regular in spite of the absence of a master plan. The only real master plan of Chicago was the land ordinance that crosses almost the entire United States. However, Chicago could be split into concentric zones that stand in sharp formal contrast to the rectangular grid of the land ordinance.

Chicago's concentric zones emerged in decentralized decision-making processes. Park realized that the city owed its orderliness to social forces rather than the land ordinance or the Burnham plan. This latter document of urban planning, the main designer of which was the famous architect whom we have already met in the context of the Chicago fair, did not envisage such regularities. The Burnham plan was often lauded for its beautiful aquarelles, but it was equally criticized for ignoring the need of residential zones.

Yet another related Chicago school emerged in economics as late as the 1950s and 1960s. Milton Friedman is probably one of the best-known exponents of this school, the members of which have won many Nobel prizes. Their approach became famous for its rigor in testing theory against empirical data, as well as proposing ways in which individual decisions come together in decentralized decision-making processes and from efficient, free markets. Hayek's time at the University of Chicago was associated with these ideas as well. The Chicago school of economics was an outgrowth of the doubtlessly larger school of sociology.

In turn, these schools branched and formed other schools of thought. The Chicago school of sociology received a counterpart at the UCLA, known for the polycentric model of the city; and the Chicago school of economics left its traces in the so-called "Chicago school of the west."

Taken together, there are multiple Chicago schools of philosophy, sociology, economics, Friedman, Park, etc., and they have three main things in common: They are related to work done in the various departments of the University of Chicago; their exponents tested theory against empirical data; and they proposed ways in which decentralized decision-making and individual psychology result in social trends, spatial distributions, and free markets. These schools currently form the largest and best-known group of Chicago schools today. The branch initially grew from William James's Chicago school of 1904.

Around the same time, the Chicago school branched in a different direction. In 1903, the realist writer William Dean Howells wrote an article titled "Certain of the Chicago School of Fiction." Howells constructed his narrative around Chicago's writers and their literary characters that were "fine as frank," and whose pure thought flew in fountains of slang. Coincidentally, the alliteration on the letter "f" seems to foretoken Sullivan's later "form follows function." In comparison to Boston, New York, and San Francisco, in Chicago, commonplace people were rendered "so frankly, so boldly, and yet so delicately defined, so unmistakably shown, so undeniably true."<sup>12</sup> As we learned from Henry James, realism was not limited to Chicago, but the mix of reality and romance most profoundly fascinated Howells in the literary works of the Chicagoans.

The Chicago school of fiction is closely related to the Chicago schools of television, radio, baseball broadcasting, art, and many more. Back in the 1950s, so goes the story, Chicagoans said that New Yorkers thought television was a lesser version of Broadway while Los Angeles made movies, not TV shows. In response, the Chicago school of TV inspired Americans to buy sofas, sit down, and laugh without expecting a pretentious presentation. Here, the trace of realism of the Chicago school is imbued with comic and fun.

### 1.3 The Prairie School of Architecture

There are more Chicago schools than disciplines in Chicago's universities. But the richest stock of Chicago schools may probably be found in architecture, where they are most deeply rooted.

As already mentioned before, the educational program called Chicago School of Architecture emerged in 1893 from Millet's efforts. The Art Institute of Chicago joined forces with the newly founded Armour Institute of Technology (now IIT), in an attempt to unite art and technology. The deal was clear: The Art Institute offered art and flattered itself for its large, state-of-the-art collection of casts, while Armour offered engineering and mathematics.

Despite the controversies around the Chicago fair, it can be said that, over the course of the years, the Chicago School of Architecture remained rooted in the old vision of a unison of art and technology as attested by Van Brunt. The yearbooks show that Burnham and Sullivan were among Van Brunt's peers who went in and out of the school's doors. Later, again,

it was John Holabird, the son of William Holabird, who chose Mies to reform the school.

However, where there are many minds, there are many ways. In 1908, Thomas Tallmadge, the school's lecturer in architectural history, redefined the meaning of the term Chicago school, slightly departing from all previous definitions. He mentioned Sullivan as a key figure, but mostly referred to Frank Lloyd Wright and a group of colleagues who built suburban mansions. Walter Burley Griffin was one of the architects often mentioned among the champions of this separate branch of the Chicago school.

Tallmadge's generation became particularly influential in the rise of architectural licensing first established in the state of Illinois in 1898. It is this latter success story that was known to the NCARB when it corresponded with Giedion in 1939, disapproving of his use of the term Chicago school.

Nevertheless, attentive reading of Tallmadge's article reveals that he tied his historiography to precursors. In particular, he mentioned that the idea of the Chicago school had come from the East. Although Tallmadge did not provide an unambiguous reference, A.D.F. Hamlin's Chicago school can be reconstructed as a very likely source. After all, Tallmadge regarded Hamlin as one of the greatest architectural historians in the country.<sup>13</sup>

At this juncture, the historiography of this second Chicago school took an unexpected turn. Many architectural historians forgot about A.D.F. Hamlin and held that Tallmadge coined the term "Chicago school," somewhat copying each other's phrasing. The real story is very different. Tallmadge's school came too late, and, for this reason, it stands apart from most other Chicago schools.

In the 1950s and 1960s, a debate ensued. Around that time, the historian Hugh Morrison, who made his name as Sullivan's biographer (Morrison had actually proposed a collective portrait of the Chicago school but the editor made him write a monograph), taught at Dartmouth College. Although the college is quite a distance from Chicago, Morrison had two notable students interested in the Chicago school. The two adepts, Mark Peisch and H. Allen Brooks, later became advocates of Tallmadge's Chicago school, and they seem to have believed that exclusiveness made their school more significant. Thus, they attempted to discredit the first school, occasionally employing normative and bitter words such as "right" and "abuse" in their books and essays.<sup>14</sup>

During this time, even the correspondence between Morrison and Peisch shows a somewhat tense personal relationship. Peisch asked his professor's approval for publishing a historical document that discredited Frank Lloyd Wright just after his death. Although this document was in Morrison's favor, the experienced professor answered with a long letter concluding, "I have given generations of students the 'good' picture of Wright, not the bad one. It has always been a temptation to 'get even' with the old bastard—but I couldn't—he's too great an architect."<sup>15</sup>

Eventually the *Journal of the Society of Architectural Historians* published Peisch's letter to the editor in October 1961, which was the beginning of a fateful sequence of events. First, Carl Condit became aware of Peisch's writings on the Chicago school. Thus, Condit sent Peisch a letter mentioning that he was revising his own book on the Chicago school, and he asked for the title of Peisch's

dissertation. Peisch answered that the title of the dissertation was "The Chicago School and Walter Burley Griffin," but he was unable to send a copy. Later, in 1962, the University of Chicago Press asked Peisch to peer-review a manuscript by UCSB's David Gebhard titled "The Prairie Spirit in Architecture." Peisch questioned the terms "Prairie spirit" and "Prairie architect," favoring "Chicago school" instead. Finally, Peisch's own dissertation appeared in an edited form in 1964 under the main title "The Chicago School of Architecture."

By circumstance, Carl Condit's edited book on the Chicago school also appeared the same year under the same main title. The first edition had been published in 1952. Against Condit's wish, the editor at the University of Chicago Press had chosen the title *The Rise of the Skyscraper*. However, in 1964, with Condit having gained more recognition in architectural history, the expanded book version finally received the title initially intended by the author: *The Chicago School of Architecture*. Peisch and Brooks showed their contempt, which ended in a heated debate.

Although the fuel for this debate burned out very soon, the flame was later reignited by an exhibition held at Chicago's Museum of Contemporary Art: "100 Years of Architecture in Chicago," which left out much of the Prairie school. Over the course of the ensuing decades, waves of public interest in the Chicago school of architecture alternated with periods of silence. In the end, the term "Prairie school" was favored for Tallmadge's Chicago school. Furthermore, the Chicago School of Architecture Foundation changed its name to Chicago Architectural Foundation, and historians began to disbelieve that the first Chicago school ever had a significant history prior to Giedion and Condit. Robert Brueggemann's essay, "The Myth of the Chicago School," stands witness for this perspective. Eventually, the Chicago school may have become somewhat of an urban myth, as the public interest in the Chicago school during the late twentieth century eclipsed the school's early history. The waves of history washed away the memory of the earlier Chicago school.

### 1.4 From History to Theory

From the previous sections, an awkward historic curiosity becomes evident. The Chicago school of architecture was first encountered in the public discourse in the late nineteenth century, but it became famous only in the second part of the twentieth century. Such a long period of formation may seem difficult to explain. It seems altogether improbable that only the second part of the twentieth century was favorable for the dissemination of the Chicago school. Scholars in architectural history did not agree with each other in the second half of the twentieth century. Furthermore, the city of Chicago prospered in the late nineteenth century, but it witnessed economic distress in the late twentieth century.

Even more striking is the fact that late fame is a phenomenon not unique to the Chicago school of architecture, but common to most of the Chicago schools. Most publications that reference the Chicago school were written after 1950. Taken together, the Chicago schools diversified between 1850 and 1950, but they rose to fame only thereafter. This trend seems almost paradoxical. Notably, the same trend it is not found in phrases such as "school," "Chicago," or "Chicago, Illinois."

At this point, this observation can be interpreted as one of many curiosities of history. If the reader of these lines wishes to do so, please stop here. However, if you feel unsatisfied with this interpretation, please continue reading. The history of the Chicago school is so rich that revisiting it can only lead us to interesting observations. To interpret these observations, this present article formulates and tests hypotheses. However, to formulate hypotheses, we must first formulate questions that we later answer:

Why did the Chicago schools require a century of formation to only become popular in the second part of the twentieth century? How is it that the Chicago schools are present in so many disciplines, yet share a common ethos? Why did the phrase "Chicago school of architecture" become so suddenly fashionable, only to disappear, and then return and disappear again and again? How could the schools of sociology and economics outgrow architecture, although the latter had a longer history? Why are there so many similar schools in sociology and economics, to begin with? Why does the Prairie school of architecture seem so different from all other Chicago schools; why did it not spread across disciplines like the first school?

To answer these questions, the next two sections develop a theory of cultural change and postulates how ideas are shaped by large-scale dissemination and reception. A theory is developed that allows for complex reasoning and puts technical terms such as "period of formation," "foundational idea," and "common ethos" into a larger scientific context. Dear reader, if you feel overwhelmed by the many Chicago schools there are, let me take you on a journey that will surprise you:

The Chicago school is a textbook case. Hamlin's book that discussed the Chicago school in 1900-1907 was a textbook of international and American architectural history. Giedion's *Space, Time and Architecture* was based on a class taught at Harvard and became something of a textbook, too. Yet, there is another sense, in which the Chicago school is a textbook case. It is a textbook case not just of architecture, but also of something else. This something else is something much broader that makes the Chicago school appear as something very common in life.

The growth of the Chicago school as a new tradition, or as an urban myth, is surprisingly regular. Other things in life grow in very similar ways. So, would that make the Chicago school a textbook case of life? Life has no textbooks, but life science does. Life evolves, and evolution can be studied; and there are textbooks and textbook examples for many of the processes that have been studied in the life sciences and in evolutionary dynamics.

If we juxtapose the textbook case of evolutionary dynamics to quantitative data on the Chicago school, the two look the same. To understand why the two do not just look, but really are the same, a little more brainwork and explanations are needed. Hopefully, this work leads us to both a new understanding of the Chicago school and a new understanding of cultural life at large. Would it not be fantastic to say: We have understood a recurrent process in the day-to-day, year-to-year, and decade-to-decade dynamics of new traditions, urban myths, and cultural life?

12. Howells, "Certain of the Chicago School of Fiction," 740-746.

13. Tallmadge, *The Story of Architecture in America*.

14. Brooks, "'Chicago School' Metamorphosis of a Term." Peisch, *The Chicago School of Architecture: Early Followers of Sullivan and Wright*, 3.

15. Peisch, Letter to Hugh Morrison, February 22, 1959.

## 2. Authors and Dissemination

So many ideas and values are associated with the Chicago school that no dictionary definition can summarize them all, and the human mind cannot consciously perceive them all at the same time. Rather, the term “Chicago school” has many senses, some of which are frequent while many others are rare. In this respect, the Chicago school is similar to many other terms. Take the “Vienna school,”<sup>16</sup> the “humanities,” or “science.” Each of these terms has many senses. However, are ambiguity and polysemy not the opposites of accuracy and clarity? Why does culture have to cope with such vagaries?

Some interpreters of the Chicago school attempted to limit the term to one single definition, treating the heterogeneity that they encountered as a cultural problem that, in their minds, had to be abated. Similarly, but over a longer period of time, authors of style guides lamented that their contemporary society degraded language and took culture down with it.<sup>17</sup> Will ambiguity and polysemy lead the Chicago school, and for that sake the humanities and sciences at large, into a much-feared cultural crisis?

A similar point could be made from the perspective of communication science. In his seminal paper of 1948, Claude Shannon defined communication as “exact or approximate reproduction of a message at a new point.”<sup>18</sup> The distinction between exact and approximate was crucial at the time because telecommunication was new and noisy. In this broader context, Shannon coined the term “information entropy,” also referred to as “Shannon entropy.”

“Entropy,” just like the other terms mentioned before, has many possible senses. Initially, the term was coined in physics. In any isolated physical system, entropy can only accumulate. This is to say that all freely available energy is eventually dissipated, leading to a physical “dead state,” in which nothing ever moves again. This phenomenon is known as the second law of thermodynamics, or the entropy principle. Similarly, information entropy accumulates during repeated transmission. However, does that mean that the approximate reproduction of information inevitably leads to entropy and ambiguity as opposed to clarity and culture? Is culture worn out by communication?

The theory of dissemination proposed here leads to a quite different conclusion. In particular, if multiple pieces of information are exchanged in parallel, Shannon’s assumption that information is exactly as well as approximately reproduced during communication translates into a new mathematical model equivalent to the “quasispecies equation.” In this new light, large-scale communication is a process that negates entropy (figure 8).

A close look at this equivalence reveals a remarkable bridge between nature and culture, and as one could only expect, it also brings to light an entire parade of highly ambiguous, but equally useful words.

The quasispecies equation builds on the assumption that information is exactly as well as approximately reproduced—hence the name “quasi”-species, which literally means “approximately” reproduced species. If Shannon was right, approximate reproduction also occurs during communication. Hence, the quasispecies equation logically applies to communication, too. However, a case can be made that approximate reproduction occurs in many other processes present in human culture and cognition, such as the formation and recall of memory, deliberate acts of creativity, and even play.

There is an increasing amount of evidence that memories are rewritten every time they are recalled. This process may unconsciously lead to false memories that significantly depart from the previous experience.<sup>19</sup> In addition, in many acts of creativity, people may also consciously formulate new ideas by deliberate departure from previous knowledge. And furthermore, there is brainstorming, and even play: people like to think out of the box, and kindergarteners involved in the telephone game are curious to hear what comes out at the end of the line after a message is repeatedly whispered from ear to ear. During all of these processes, information is replicated sometimes exactly tough other times only approximately.

It is obvious then, that the approximate reproduction of information may lead to the formation of competing variants. Let us formulate this idea as the “principle of variation.” This principle shall state that in many processes in human culture, information is exactly, as well as approximately, reproduced, giving way to variants, which people may later select from. The significance of this principle runs much deeper.

Culture comes in many varieties. Even the term “varieties” itself has many senses. There are, for example, biological as well as linguistic varieties. Charles Darwin, in his *Origin of Species*, began his chapter on natural selection with an evaluation of the terms species and varieties. He recognized how ambiguous their meaning was. Given the historic context, this ambiguity is not surprising. There was plenty of time for the terms genus, species, and varieties to acquire new senses. Already in antiquity, logicians were interested in how it was possible to develop systematics in order to study the many varieties of life and culture.

The words genus and species, and even genetics, stem from the Aristotelian method of formulating definitions, namely by “genus and differentia.” Aristotle and his school defined the meaning of words, objects, ideas, and even memories by evaluating what makes these items special. Thus, genus stays for the commonalities between two definable objects; differentia for their specific differences. From the beginning, genus and differentia applied very broadly to physics, nature, and culture. And even today, this technique is applied across the sciences and humanities.

In the times of Linnaeus, and of the Linnaean taxonomy, systematic thinking led to major scientific breakthroughs.

Thus, it has come to pass that people most closely associate genera and species with the domains of life. However, systematic thinking also is the basis for most other sciences, humanities, digital humanities, and natural language processing. There are biological genera, but there are also literary genres. There are biological species, but there are also chemical species.

The theory of evolution expanded systematic thinking by explaining how the many varieties of life come into existence, and why they keep existing once they emerge. The essays of Alfred Russel Wallace and Charles Darwin read at the Linnean Society in 1858, in which modern evolutionary theory was first publicized, both deal with variation in fixed physical environments. The titles read “On the Tendency of Varieties to Depart Indefinitely [...]” and “On the Variation of Organic Beings [...]” However, the two authors may have been quite aware that the principle of variation does not only apply to nature.

Famously, Wallace sent his manuscript to Darwin from the Malay Archipelago, where he was collecting rare specimens of beetles and birds. Later, he wrote that the many living varieties of so-called “paradise birds,” he found there, were something he could not explain without the theory of evolution. A case can be made, that not only living birds, but also their mythical counterparts in human fiction, such as the Greek phoenix, the Russian firebird and the Romanian maiastra, come in many interrelated varieties that were disseminated across the globe.

This represents an analogy between nature and culture that Wallace was possibly aware of. He started his evaluation of paradise birds with their many variant names such as “birds of sun,” “birds of god,” and “dead birds.” Still, at the time when the theory of evolution was first formulated, little was known about genes other than the fact that the information that they stored was gradually transformed.

The quasispecies equation builds on evolutionary theory, but it was formulated when it became possible to chemically analyze genetic information. This historical coincidence made people strongly associate this particular equation with physical chemistry. A chemical species refers to the ensemble of identical molecules, for example the species of all water molecules. The term quasispecies was coined to allow for some additional variation. However, in the most generic formulation, the quasispecies equation does not apply only to chemical quasispecies, but to processes of variation and selection in general. The equation unites systematic thinking with the principle of variation, which, as already discussed above, applies to physics, nature, as well as culture. Would that be a hint that the quasispecies equation can be used to estimate how ideas flow and transform while they are being disseminated in human culture?

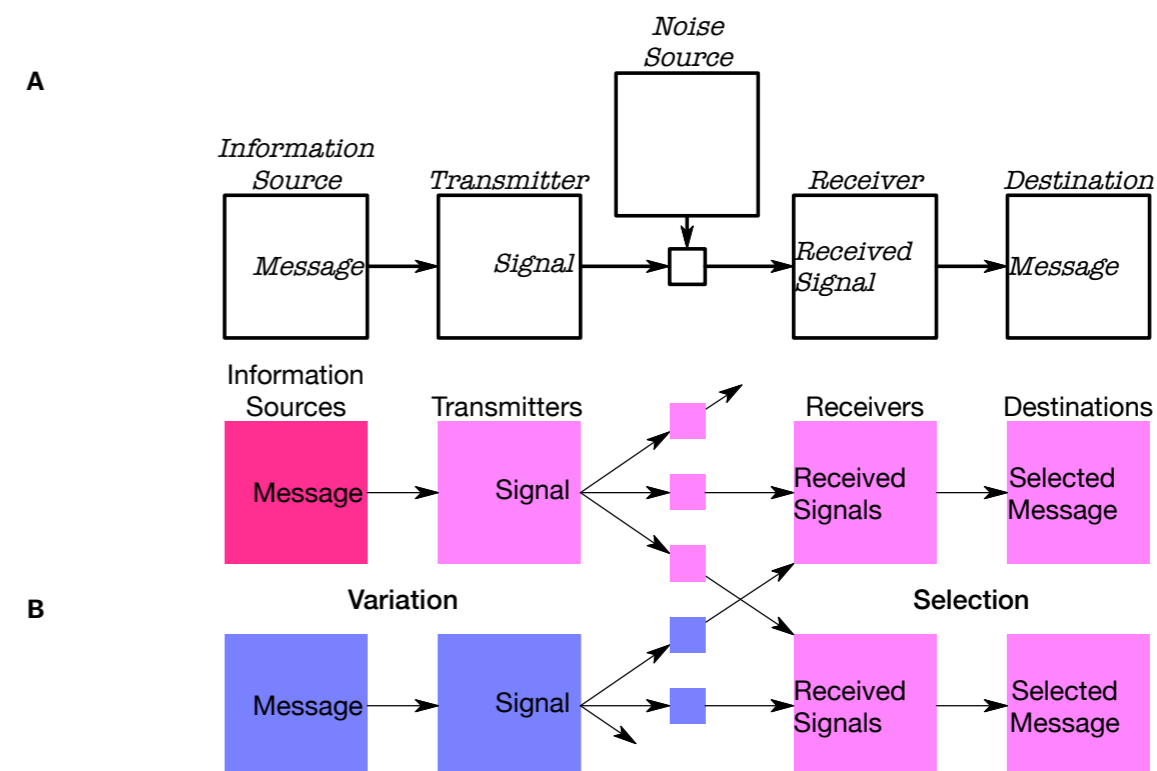


Figure 8: A) Claude Shannon laid down the classical framework for the study of communication and entropy in 1948-49. The exchange of a single message generates entropy. (Shannon 1948/49) B) The exchange of many messages in parallel accommodates variation-selection processes, which negate entropy and accumulate meaningful variants. The equivalent process is found in the quasispecies equation. (Baciu 2017/18)

16. Sigmund, *Exact Thinking in Demented Times: The Vienna Circle and the Epic Quest for the Foundations of Science*.  
Kandel, *The Age of Insight: The Quest to Understand the Unconscious in Art, Mind, and Brain*.

17. Pinker, *The Sense of Style: The Thinking Person's Guide to Writing in the 21st Century*, 4.

18. Shannon, C. "A mathematical theory of communication," 379-423. Shannon and Weaver, *The Mathematical Theory of Communication*.

19. Shaw, *The Memory Illusion*.

## 2.1 Dissemination: Empirical Testing

The Chicago schools have co-evolved somewhat like an urban myth to which there are many variants and alternatives. To test the predictions of the quasispecies equation, these variants and alternatives must be systematically and quantitatively evaluated. Imagine collecting all books and periodicals that referenced the Chicago school. The HathiTrust, a large network of North American university libraries, has 105,000 such records. Among these records, some Chicago schools must be more frequent than others, but would it be possible to predict this stratification of different schools of thought in the public discourse using the quasispecies equation?

As mentioned before, there are many Chicago schools in architecture, philosophy, sociology, economics, radio, television, music, art, etc. Many of these schools are closely related. In the history of dissemination, there were many important schools, each of which gave rise to an entire spectrum of surrounding variants that were not necessarily frequent or commonly agreed upon.

Some Chicago schools are actual schools of thought, while others are partially or completely fictitious. The Chicago school of bone-crushers, for example, might be interpreted as a counterpart to the emerging Chicago school of criminology in the times of Al Capone. This underground school of unknown authenticity was one of many schools only rarely mentioned in the public discourse, among which one can also find the Chicago school of speculators in New York, or the Chicago school of the west.

When evaluating the corpus, one is particularly pleased with the richness of recurring expressions such as the ones just mentioned, and they were used in disambiguating the different senses of the term Chicago school. Disambiguation by recurrent expressions proved more precise than computer-driven approaches.

After disambiguating the different schools of thought by recurrent expression, Aristotle's genus and differentia served to estimate pairwise distances between groups of records, and the quasispecies equation was used to model the effects of large-scale dissemination. The technical details of the methodology are introduced in my dissertation in more detail. Figure 9 shows the results for the Chicago schools of social science, and the results support the new theory.

An important consequence can be drawn from the theory of dissemination: It would make no sense to artificially limit the meaning of the term Chicago school to just one definition. On the contrary, a large number of terms must be ambiguous in any living language. Ambiguity and polysemy constitute the evolutionary potential of that language. However, in the absence of evolution the language eventually becomes obsolete. Conservative languages, such as Ecclesiastical Latin, and artificially archaic languages, such as the Greek Katharevousa, support this hypothesis by the fact that they were eventually overthrown. By contrast, successful programming languages, although they must be used to give unambiguous instructions to the computer, let their users define and redefine any number of processes again and again. Thus, variables in programming languages, if collected from multiple codes, may be even more ambiguous than words collected from multiple text documents.

Mathematics, too, lets people define parameters and variables. The Chicago school is our variable; and variables vary.

Rather than conserving a language, it would seem better to let dissemination find its ways. With the quasispecies equation in mind, dissemination can be interpreted as a flow system that efficiently searches for meaningful information. This property explains why culture always has good solutions at hand, mostly even before a problem is faced. This is not because someone foresees the future, but because culture transforms individual creativity into collective strategy.

## 2.2 The Axes of Dissemination

Before continuing to the next section, the results obtained from testing should be put into a broader historical context. Distributions of occurrence were studied in the past by figures such as the great Vilfredo Pareto, Alfred J. Lotka, and George K. Zipf (mentioned in the context of the Vienna school). The methods of collecting and aggregating data that these researchers used were statistically incomplete,<sup>20</sup> but their findings proved consistent with each other, for which reason the studies are widely known and accepted in their essence. Bibliometrics, for example, emerged from Lotka's studies. The present theory not only replicates and explains some of these previous findings, but it also resolves the problem of statistical completeness by giving more detail to the mathematical model and more structure to the predictions.

In physical chemistry, attempts to explain frequency distributions eventually led to the quasispecies equation; however, in the social sciences and humanities, no final conclusion has been reached. For example, it has remained unclear why certain words are more frequent than others and to what extent. This lack of consensus might have been caused by the fact that few researchers seriously evaluated word senses when they developed their theories. Thus, the theories became very abstract and made no predictions whatsoever with regard to cultural change and the meaning of words. One attempt to explain word frequency distributions must nevertheless be mentioned here because it employed the principle of variation, though unconsciously.

Since the 1960s, increases in computational power led to the adoption of a technique of analysis known as "dimensionality reduction," in which sparse, high-dimensional data is reduced to less sparse data with a smaller number of dimensions. This technique gave way to the development of two entire fields of study, namely, digital humanities and digital sociology.

In the heydays of digital sociology, the French researcher Pierre Giraud, attempted to explain word frequency distributions using this technique.<sup>21</sup> He posited that word matrices are best reduced to 32 independent dimensions. In line with this procedure, he held that all words were combinations of the same number of semantic units he called "semes." Giraud believed that his semes were something like the chemical substance of all words. From this setup, a Pareto distribution could have emerged naturally.

However, this rigid world of semes remained otherwise illusive. Indeed, the semes are nothing absolute, but they depend on the corpus that is being considered. For this present article, roughly 100,000 articles were collected that contain the term "humanities." The initial vocabulary of more than 150,000 words was then reduced to 250 dimensions, and subsequent studies revealed that many of the resulting 250 dimensions were closely aligned to material published by individual presses; thus, making it clear that the dimensions that came out of dimensionality reduction have little absolute value, and are dependent on corpus, publishers, and authors.

In the 1980s and 1990s Giraud's semes were replaced by a new term "memes," which is still in use today though with many ambiguous senses—which may not sound surprising any longer. Around the same time, increased computational power led to growing interest in dimensionality reductions. In 1997, Thomas K. Landauer and Susan T. Dumais developed an ingenious semantic test, which indicated 200–300 dimensions to be a number much better than 32.

In addition, the two researchers, one of them a psychologist, the other a computer scientist, also attempted a new psychological explanation for the algorithm. They wrote that they attempted "to reduce the otherwise magical appearance of [the algorithm's] performance." For example, they explained that the first steps of data preprocessing were meant to filter out entropy and simulate associative learning.

However, despite these attempts, Landauer and Dumais remained unable to make the connection between dimensionality reduction and any extant theory of learning: "the first processing step [...] is a rough approximation to conditioning or associative processes. However, the model's next steps, the singular value decomposition [SVD] and dimensionality reduction are not contained in any extant theory of learning."<sup>22</sup>

Inspired by Landauer and Dumais, an entire subsequent generation of authors polished the algorithm to excellence.<sup>23</sup> However, the theoretical meaning of the dimensionality reduction remained unclear despite the many technical improvements.

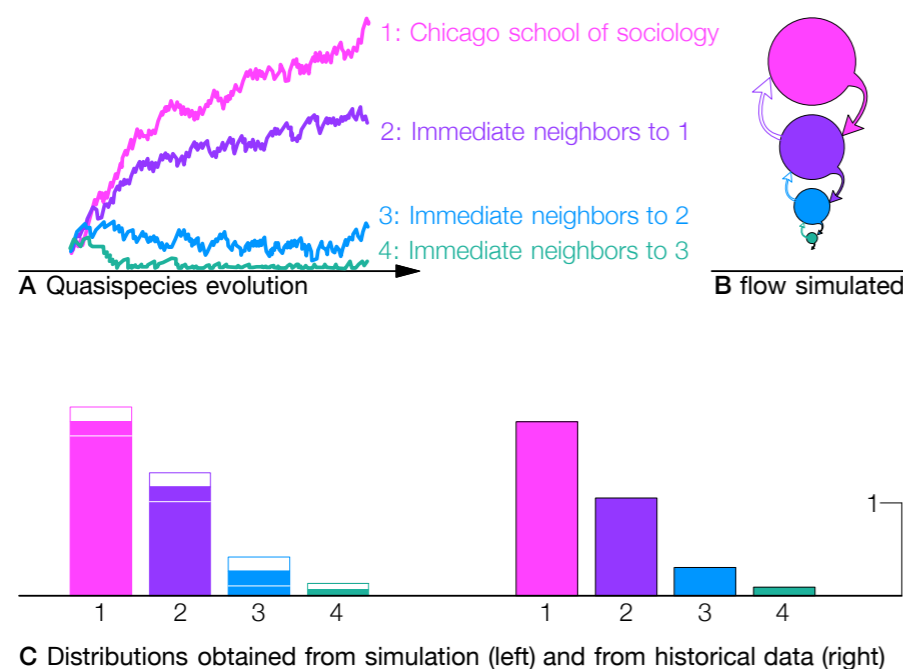


Figure 9: Distributions of occurrence simulated through the quasispecies equation (which is a textbook case of evolutionary dynamics) compared to historical data on the Chicago schools of sociology. This simulation explains persistent clustering patterns as an outcome of variation-selection processes as illustrated in the previous figure. The simulation was run with stochastic refinements adapted from Bertels, Gokhale, and Traulsen (2017), where the mathematics were applied toward a different purpose.

20. Piantadosi, "Zipf's Word Frequency Law in Natural Language: A Critical Review and Future Directions."

21. Giraud, "The Semic Matrices of Meaning," 131-139.

22. Landauer and Dumais, "A Solution to Plato's Problem: The Latent Semantic Analysis Theory of Acquisition, Induction, and Representation of Knowledge," 211-240.

23. Blei, Ng, and Jordan, "Latent Dirichlet Allocation," 993-1022. Matveeva et al., "Term Representation with Generalized Latent Semantic Analysis." Bullinaria and Levy, "Extracting Semantic Representations from Word Co-occurrence Statistics: Stop-lists, Stemming, and SVD," 890-907. Deveaud, Sanjuan, and Bellot, "Accurate and

Effective Latent Concept Modeling for Ad Hoc Information Retrieval," 61-84.

The new theory of dissemination may answer this open question. The SVD that Landauer and Dumais and many of their followers utilized is a generalized form of eigendecomposition, which is the mathematical procedure behind the quasispecies equation. The slight difference stems from the fact that Landauer and Dumais used rectangular matrices, while eigendecomposition requires the matrices to be square. The first is a more general case, but the choice lies with the experimenter. Some of the followers of Landauer and Dumais used eigendecomposition.

The quasispecies equation explains why the matrix must be decomposed. Geometrically, the eigenvectors and eigenvalues represent the axes of the hyper-ellipsoids that enclose all vectors in the matrix. In our case, these values may count as estimations of the “axes of dissemination” in the public discourse.

No wonder then that the axes of dissemination often converge with individual publishers. Based on their editorial policies and the like, journal editors estimate the value of information, they accept or reject papers, and they disseminate only certain types of ideas at the cost of others. It is thus that ideas keep clustering into cohesive groups as a result of the principle of variation in the process of dissemination.

In presence of the entropy principle alone, there would be no groups of associations; everything would eventually become evenly distributed. However, as the axes of dissemination form, the entropy is reversed.

### 3. Audiences and Reception

Varieties of ideas are disseminated in parallel, which already accounts for some phenomena of ambiguity and for the accumulation of culture rather than entropy. However, one must not forget that publishers themselves compete for audiences. Similar chains of selection may occur in nature. Among Wallace’s birds mentioned before, the males display rich plumage, which impresses the females. But among the latter, those that choose the freshest display leave most offspring in a population in which epidemics are one of the largest concerns. Humans, too, have developed highly sophisticated tests to figure this question.

The theory of reception proposed in my dissertation attempts to predict how audiences react to the information they are flooded with. The question is almost the same as in the previous section: Does ambiguity lead them into increasing confusion, and into cultural crisis?

Continuing a century-long line of research, the psychologist Vincent Deary and the neuroscientist Antonio Damasio have recently emphasized how important the concept of homeostasis is for understanding brain processes. The homeostatic imperative states that all living beings must maintain a set of states at which their life processes are most efficient. Thus, life, in a biological sense, is similar to the “life state,” as it was recently defined in physics, namely as the opposite of the dead state. In addition, the homeostatic imperative may

find a parallel in physics in the “constructal law,” which is somewhat the opposite of the second law of thermodynamics. It states that flow systems must increase their efficiency to persist and prevail. The constructal law earned Adrian Bejan the Benjamin Franklin Prize in 2018. The homeostatic imperative and the constructal law are similar to each other in that they state the conditions under which life—physical or organic—may persist and prevail.

The theory of reception proposed here states that entire audiences attempt to establish homeostasis when they are flooded with information. To evaluate whether this takes place, the behavior of the audiences is further split into three homeostatic sub-processes, namely: habituation, discrimination, and sensitization.

These three processes are particularly important in studying the dynamics of reception because they generate predictable, time-dependent consumer response: Habituation filters out repeated, irrelevant messages; sensitization recovers repeated but important messages; and discrimination makes the distinction between similar messages that are of different relevance to the recipient.

Let us begin with the first of the three processes, and later add the others in. Habituation is one of the brain’s most important filters of information. In his pioneering work, Thomas Insel showed that a minor difference in neurological architecture causes the related montane and prairie voles to react very differently in their daily life, which constitutes an important adaptation to the environment that the animals inhabit.<sup>24</sup>

The neurotransmitters that Insel studied were later employed in countless studies on the physiology of perception in humans. In this context, they were used to study processes that led to the formation of moral judgments. And from this and similar research, it resulted that the same neurochemistry that Insel studied in voles also influences collective decisions in entire groups of people.<sup>25</sup>

Habituation is abundant in biological organisms, and it varies across them. Nevertheless, its dynamics are easily summarized as follows: The more organisms encounter repeated stimuli that are meaningless to them, the stronger their nervous systems build mechanisms that suppress those incoming stimuli. In our case, the press repeatedly disseminates ideas that are estimated to be successful, as well as advertisements that may pay well. But the audiences develop ways to filter out what has been too frequently repeated to them.

Habituation requires the presence of repeated stimuli in order to be developed and maintained. Therefore, once a story becomes outmoded, habituation is also lost. This latter phenomenon gives fake news and the like a chance to return. For example, the vortex theory of the solar system by René Descartes is flawed, but it experienced many comebacks, most recently in a viral video in 2018.

The dynamics of stimulation and suppression summarized above are easily expressed as a pair of Lotka-Volterra equations. Alfred Lotka developed the equations in physical chemistry at the beginning of the twentieth century. However, the equations eventually led him to speak of evolutionary cycles in technology and human society.

Around the same time, the term “business cycle” suddenly became popular in economics. Interestingly, Pareto had already compared his distribution to the shape of a spinning top. Lotka went further to formulate a third law of thermodynamics, which accounted for the negation of entropy. It is this law that later inspired the Nobel laureate Ilya Prigogine and his contemporaries in their theories about the origins of life. Flows of energy, metabolism, vortices, Norbert Wiener, as well as Eigen, Schuster, and the quasispecies equation are terms and names associated with inquiries into how entropy is negated in physical and biological systems. In addition, the constructal law mentioned before grew on top of this theoretical edifice.

In many cases, Lotka-Volterra equations predict cyclic behavior. The classical example is a population of foxes that eat rabbits. The growth and decline in population sizes looks like waves because the sizes of prey and predator populations consecutively outbalance each other. More broadly, the equations simulate interactions between multiple populations, and they are therefore uniquely suited to model the interaction between entire groups of authors and audiences.

### 3.1 Reception: Testing the Effects of Habituation

Testing the predictions made by a Lotka-Volterra model that considers only two populations requires settings in which these populations are rather isolated. In our case, we must find an idea that almost completely shaped its own public discourse, such that writers and target audiences fall into one single, cohesive circle, or one big cluster of people. A good example could be the Chicago school of architecture. This Chicago school was relatively isolated from the many others, many of which were associated with the University of Chicago that, however, does not have a program in architecture.

Quantitative testing supports this thesis (figure 10). In addition, historical evaluation reveals that there were heated debates around the Chicago school of architecture. In particular, there were three major exhibitions held by two of Chicago’s most renowned museums. Some of these exhibitions converged with waves of public interest, but the Lotka-Volterra model also predicts waves of public interest in absence of exhibitions.

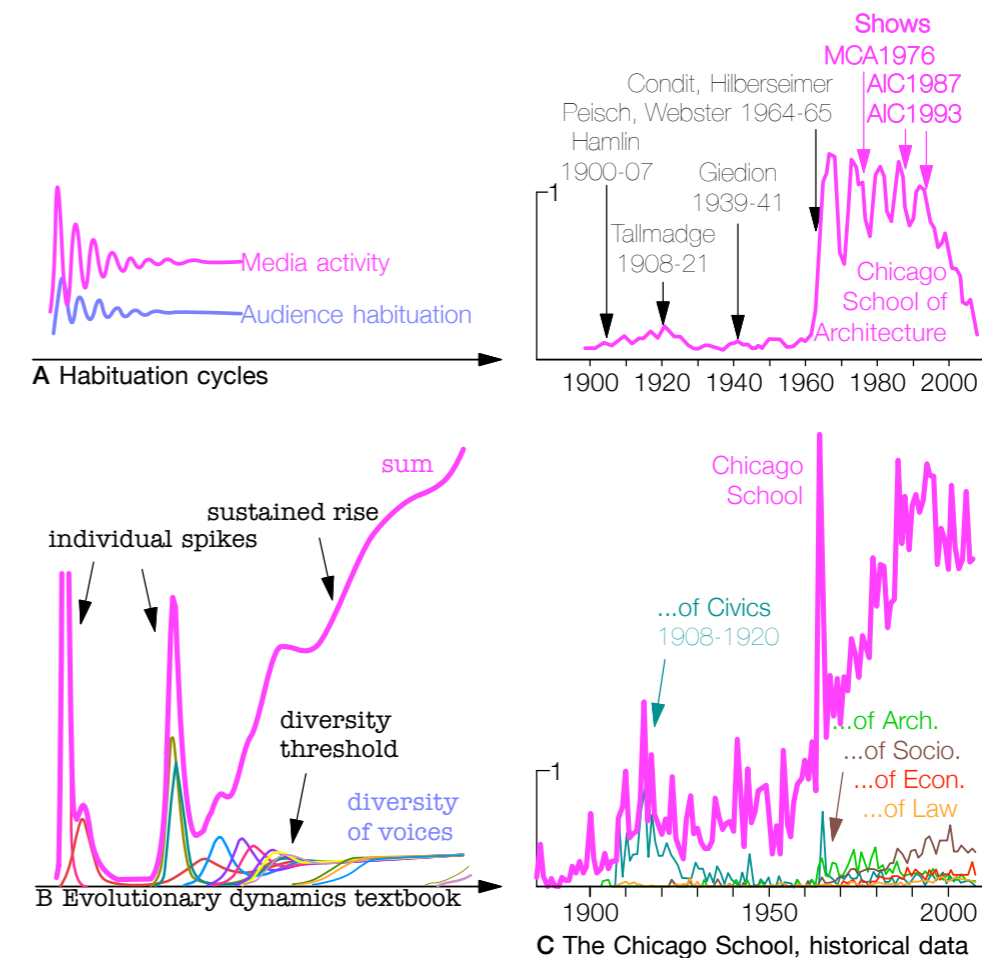


Figure 10: Large-Scale Reception. A) Media activity and habituation lead to waves of fashion. B) Homeostatic processes of habituation, discrimination, and sensitization lead to a double-phased evolution. This is identical to the life science textbook case of evolutionary dynamics. (Nowak, *Evolutionary Dynamics: Exploring the Equations of Life*) C) The simulated phenomena are also found in the historical data for the Chicago school. Above: “Chicago school of architecture (Data: Dan C. Baciu, HathiTrust Research Center ACS Project 2017) Below: Chicago school at large (Data: Google Books 2012 corpus). In a forthcoming article I explain the theoretical implications in additional depth.

24. Insel and Shapiro, “Oxytocin receptor distribution reflects social organization in monogamous and polygamous voles,” 5981-5985.

25. Bernhard et al., “Variation in the Oxytocin Receptor Gene is Associated with Differences in Moral Judgment.”

### 3.2 Reception: Habituation, Sensitization, and Discrimination

Lotka-Volterra equations can also be formulated for more than two species, in which case they display rich dynamics because the cycles rarely return to the precise initial conditions. Although the equations are deterministic, small changes in the parameters lead to divergent behavior, which makes the precise duration of cycles unpredictable. Paul Samuelson, one of the Nobel laureates of the Chicago school of economics, explored the interaction of more than two species.

If habituation always acted in all the diverse sociocultural groups with the same strength at the same time, one would expect that the peaks and valleys of the oscillations occurred in synchrony. However, this is not the case. To keep track of this phenomenon, let us define two variants of an idea as diverse when habituation discriminates the two and acts against each of them independently.

Once we consider the existence of multiple diverse variants, we must also accept the possibility of interplay between variants: new variants may catalyze the revival of older ones. This phenomenon can be modeled as sensitization. Together, habituation, discrimination, and sensitization lead to a more complex system of equations.

Habituation, discrimination, and sensitization complement each other, in general. Nevertheless, there is an asymmetry. Habituation only reacts against variants of a term that are too frequently mentioned compared to their utility, but sensitization can emerge from the interplay between any two variants at large. Thus, habituation obeys a set of rules slightly more restrictive than sensitization.

The effects of this type of asymmetry in the differential equations are surprising, and they have been extensively studied in evolutionary biology. Under given circumstances, the equations thus formulated lead to a diversity threshold and a multiphase growth. Based on the quasispecies and the Lotka-Volterra equations, Martin A. Nowak and his collaborators developed an equivalent theory that proved very helpful as applied to the physiology of immunity.<sup>26</sup>

On a different time scale, the same phenomena can be observed in the physiology of perception and the accumulation of human culture. At this point, it might be important to recall that the brain controls both perception and significant aspects of immunity.<sup>27</sup> The boundary between biological and cultural life is nonexistent at this particular junction. In terms of mathematics and modeling, the observed equivalence is primarily a result of similar principles of self-organization under the homeostatic imperative.

### 3.3 Reception: Testing the Expanded Model

The history of Chicago schools at large can serve as a test object for the expanded set of equations (figures 10b-c). At first, multiple schools coexisted next to each other with habituation acting against each of them independently.

During this long period of formation, new schools were popular only as long as they conveyed surprising information. As a consequence, the collective fame of Chicago schools remained moderate although the metropolis was otherwise booming at the time.

Eventually enough schools were accumulated, and a tipping point was reached beyond which famous schools continuously sensitized the audiences. The Chicago schools then rose without constant new contributions from every single school, and despite the fact that the strongest urban growth was already over by then. This double existence led many historians astray, but it is now explained with a theory derived from basic processes that are constantly at work in human perception.

In addition, the mathematical model suggests that, in the phase of growing popularity of an idea, diversity may decline because the best interconnected and fastest spreading variants predominate, leaving more isolated ones in the shadow. This was the fate of the Chicago school of architecture that was forgotten by scholars after the turn of the century (figure 10c). As already mentioned, this Chicago school was old and vigorous, but more isolated. Such loss in the diversity of themes and narratives might reverse rising trends, in particular when old thought also becomes outdated. Finally, the trend might follow a typical s-shaped curve and reach a plateau, limited by the mere size of the audience.

#### 3.3.1 Additional Qualitative Tests

The diversity threshold hypothesis also makes qualitative predictions with respect to the public perception of polysemy. In particular, we expect that early audiences were only aware of small numbers of word senses for the Chicago school, while audiences in the second part of the twentieth century witnessed an overwhelming plurality. These predictions are consistent with the historical data as well.

In 1939, the National Council of Architectural Registration Boards only accepted one definition of the term Chicago school. John A. Holabird, the grandson of one of the great architects of the Chicago school and himself an architect, was unfamiliar with the term all together, although the Chicago school was already on the tipping point to fame. Then again, only twenty years later, the historian H. Allen Brooks felt the contrary. The vast heterogeneity among Chicago's schools of architecture overwhelmed him. He judged their coexistence a modern phenomenon.

The equations easily reconcile the many different perceptions. Both data and equations suggest that the schools were old, but diversity was a new and most apparent phenomenon for the Chicago schools in Brooks's times. Diversity is what made the Chicago schools rise in the 1950s and 1960s.

#### 3.3.2 Additional Qualitative Tests

Last but not least, the theory of reception explains yet another counterintuitive phenomenon with parallels in the life sciences.

27. Benetato, et al., "Zentralnervensystem und Abwehrfunktion: Die Rolle der Hypothalamischen Vegetativen Zentren bei der Phagozytätigkeit," 702-712. Baciú, "Nervous Control of the Phagocytic System," 127-141. Baciú, Hriscu, and Saulea, "Hypothalamic Mechanisms of Immunity," 259-277.

Schools of thought spread because some "foundational ideas" drive the dissemination. Many of these ideas persist in all circles to which they penetrate and thus lead to the formation of a "common ethos." However, foundational ideas are not easy to invent. Therefore, as they spread, they are complemented with new ideas that do not themselves drive the dissemination, but make the foundational ideas appear more diverse and help alleviate habituation. However, no selection pressure keeps these diverse attributes in place.

The counterintuitive phenomenon with respect to foundational ideas is that, although persistent in general, such ideas might partially be abandoned in the cultural circle in which they originated in favor of new drivers of dissemination. However, these newer drivers of dissemination mostly come too late and do not have time and opportunities to spread beyond their initial circle.

This phenomenon is observed in biology as well. Influential recent work in metastatic cancer shows that all metastases in the same organism share the same functional driver genes, namely those genes that make the tumors grow. This persistence is also found when driver genes vary in the initial tumor.<sup>28</sup>

These final model conclusions can also be tested on Chicago schools. The historical data show that Chicago schools often shared foundational ideas. Influential schools claimed to offer syntheses of theory and practice, and they attempted to explain the relationships between individuals and urban society in the light of what could be called an evolutionary perspective. These ideas represent the common ethos that drove the dissemination of Chicago schools. On the other hand, Chicago schools are truly diverse when it comes to disciplinary frameworks; they can be found in many disciplines, as well as many combinations thereof.

In accord with our latest theoretical prediction, the foundational ideas of the Chicago school are the richest in architecture, in their most important cultural circle of origin. In architecture, there are two Chicago schools of rather divergent theoretical orientation. The second, or Prairie school of architecture, has its own foundational ideas that differ not only from the first Chicago school of architecture, but also from most other Chicago schools. The second school came too late for its ideas to spread and form new Chicago schools in other domains of knowledge. This phenomenon may have led astray many interpreters of the Chicago school.

### 4. What is Culture?

The second half of the 20th century witnessed a sequence of five unprecedented waves of public interest in the Chicago school of architecture, and Chicago's Art Institute and Museum of Contemporary Art took advantage of the public interest at some of its highest peaks. The results were three outstanding architectural exhibitions with a public resonance so complete that it made young architects, as well as scholars, forget that the Chicago school had a much longer history. Then again, other extravagant exhibitions silently

sank in the wave troughs, and some waves did not care to be crowned by exhibitions.

This complicated relationship between artistic impulse and public reaction is untangled in this present article not only by evaluating extraordinary individual contributions to the historiography of the Chicago school, but also by showing that cultural dynamics primarily result from the interplay between large-scale dissemination and reception in entire groups of authors and audiences. Writers, curators, and journalists are creative, and may even be playful at times, but the audiences narrow down and, in this sense, delimit and define the meaning of ideas.

On second thought, it might seem almost self-evident that transmitted information is meaningless unless received. Similarly, markets of goods are determined by both supply and demand. However, this does not immediately explain how audiences work as collectives. Why does the public discourse support extravagance and white-capped waves rather than sinking into endless depression?

As we discussed, this question has a longer history. An important milestone in this history dates from the 1940s. At that time, Shannon recognized that meaningful information is always accompanied and compromised by noise, and noise can only accumulate during communication.<sup>29</sup> This also means that meaningful information is always at a loss. How then can something as exceptional as culture ever take place on this slack sea of entropy?

In the humanities, the value of extraordinary contributions is often judged by their uniqueness, their being "one of a kind." The words "extraordinary," "exceptional," and "excellent" literally mean "beyond the ordinary," "taken out," and "rising above." Outstanding contributions and culture are the opposite of depression, burnout, and entropy. Techniques of dimensionality reduction are only one empirical proof that there are waves out there on the ocean of culture, but how do these waves emerge?

Audiences do not respond to artistic impulses with indifference and entropy alone, but to a certain extent, they do respond to all outstanding, and oftentimes outrageous, information that floods them in the same way. They search for a new and more productive balance in support of life. In brief, this principle is called "homeostasis." It is omnipresent in nature and physics, and the fact that it does not leave culture untouched suggests that the latter may only be a crowning expression of life.

Many physical and biological systems negate entropy by striking a balance between variation in a large but limited environment, and homeostasis. This means that similar to the accumulation of entropy, its negation is guided by universally valid principles. The Nobel laureate Erwin Schrödinger, basing his reasoning on earlier work by Ludwig Boltzmann, popularized the idea of negative entropy in biology and physics with his 1944 book *What is Life?* Maybe we can now expand this title to *What are Life and Culture?*

26. Nowak, May, and Anderson, "The Evolutionary Dynamics of HIV-1 Quasispecies and the Development of Immunodeficiency Disease," 1095-1103. Nowak et al., "Antigenic Diversity Thresholds and the Development of AIDS," 963-969. Nowak and May, *Virus Dynamics: Mathematical Principles of Immunology and Virology*. Nowak, *Evolutionary Dynamics: Exploring the Equations of Life*,

171-186. Regoes, Wodarz, and Nowak, "*Virus Dynamics: The Effect of Target Cell Limitation and Immune Responses on Virus Evolution*," 451-462. Hill et al., "Insight into Treatment of HIV Infection from Viral Dynamics Models."

28. Reiter et al., "Minimal Functional Driver Gene Heterogeneity among Untreated Metastases," 1033-1037.

29. Shannon, "A mathematical theory of communication," 379-423. Shannon and Weaver, *The Mathematical Theory of Communication*.





# CHICAGO SCHOOLS: GYÖRGY KEPES AND FUNCTION IN DESIGN

## Abstract

Professor Golec (SAIC) gave the second of our four Chicago Lectures. Evaluating the work of György Kepes, Golec exposed a more intricate exchange than previously assumed between the Chicago school of design and the Chicago school of psychology. In this context, multiple senses of the term “form,” together with Kepes’ reinterpretation, were closely scrutinized. Here, we feature Professor Golec’s full lecture notes. The section titles were chosen by the editor.

What follows reflects Michael Golec’s ongoing engagement, since 2003, with Kepes’s theory of “dynamic iconography.” Golec’s most recent installment of this project is “The Dematerialization of Complexity, Dynamic Iconography, and Iconic (Past) Futures,” forthcoming in *Bauhaus Futures* (MIT Press).

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## 1. György Kepes at the Fogg

In January 1949, the Hungarian emigre artist and former instructor at Chicago’s New Bauhaus, György Kepes, spoke as part of a series of four public meetings held at the Fogg Museum in Cambridge, Massachusetts. The series was entitled *Graphic Forms: The Arts as Related to the Book*, and it was co-sponsored by Harvard University Press and The Bookbuilders of Boston. Amongst the other invited speakers, including W.A. Dwiggins and Walter Dorwin Teague, Kepes delivered a paper on “Function in Modern Design.” His talk attended to the role of book design in the “development of a new, richer, multi-dimensional literary art that affects human sensibility on every level of sensuous experience.”<sup>1</sup> As Kepes posits in his introductory remarks, the book fits into an ecology of design: building, chair, book, each of which is intended to serve a purpose or is meant to function in a particular manner. Yet, he is not certain of this, asking, is the purpose of building to provide shelter, the chair to support the human body, and the book to permit reading (or support the distribution of human knowledge)? Within this ecology, Kepes places a book in the hands of a reader, who sits in a chair, and both are enclosed within the sheltering space of a building. All are designed, even the human who is affected by the book’s delivery of a “new, richer, multi-dimensional literary art.” The building and the chair are frames for “every level of sensuous experience.” In order to arrive at the local reality of the affective nature of the book, Kepes takes up the task of redirecting his audiences’ understanding of function in design, because he believes that they have lost sight of its human intended purpose.

Remarking on the fetish status of “function” in design discourse, Kepes takes an admonishing tone, stating: “We tend to mistake the slogan for truth, the formula for the living form, repetition of habit for cultural continuity. Inertia leads us to carry this dead body of lifeless thoughts around with us. To halt the depletion of the life of the words we use, of the ideas and purposes that guide us, we must constantly overhaul our mental equipment.”<sup>2</sup>

## 2. “Function” Refers to Everything and Nothing

The slogan he refers to is the old bromide “form follows function,” attributed to Chicago architect Louis Sullivan. (Nowhere does Kepes directly quote the aphorism, nor does he reference the full passage from which it is all too often taken from.) Worrying aloud, Kepes claims that there is very good reason to believe that “the underlying thought [behind the aphorism] has lost its living strength.”<sup>3</sup> With his list of misunderstandings—our taking slogan for truth, formula for living form, repetition for continuity—Kepes mournfully asserts that the meaning of the term “function” has migrated too far from its life source; the term refers to everything and nothing in design. When we use the term, Kepes suggests, we are at a loss (hence by reference to the logic of the fetish, both in terms of Marx and Freud). Such a loss leaves design unmoored, or disconnected from its calling (whatever that might be). The perceived role of function (its being taken for granted), or the functional in modern design, to quote Kepes’ title for his talk, is design’s undoing. And, every pronouncement of the word “function” reveals a perverse attachment to an illusion. This is, as Kepes unambiguously proposes, design’s self-delusion at mid-century.

Kepes isn’t really concerned with reviving the call to “form follows function.” (At least I can’t take revival as a serious concern for him, since he is adamantly set against resuscitating dead forms.) He senses that something is still alive, however. Thus, he wonders aloud: How can we get back meaning in the words designers use to explain their actions? In wishing to define the purpose of design, he wants to “subject our professional catchwords to strict scrutiny.”<sup>4</sup> Thus, he asks, “What is function *in* design?” There is no other way to answer this question, according to Kepes, than to first recognize the “root purpose” of design. It is, he says, for “man,” who is the “root” of design thinking, and “human function” gives direction to the designer’s thought.<sup>5</sup> Here, Sullivan returns, but not as the source of the all too often quoted “form follows function” slogan, but as the originator of the observation: “Man perhaps and probably was the only real background that gave distinction to the works appearing in the foreground as separated things.” Thus, with Sullivan’s observation in mind, Kepes asks: Is the purpose or function of a book its being read? The answer: Through design, the function of a book is for its human reader to “function better, that is, [to] live fuller and freer.”<sup>6</sup> Therefore, function is not a source for design, but rather function *in* design is an attentiveness to human social life. It is here that I detect an echo of Charles Eames, who as early as 1941 advises designers to develop a “habit of approach” and an “attitude of feeling” for human scale. Kepes doesn’t take up “function” as a mere neglected problem for design; rather, he seeks to recover the field’s authority on the topic of the human function *in* design. Whether or not he is successful is another story for another time. For now, let me say this: Kepes’ goal is to bring function back home, back to the neighborhood (or scale) of ordinary human interaction, as if in answer to design having somehow departed from the everyday and the

### Notes

1. Kepes, “Function in Modern Design,” 14.
2. Kepes, “Function in Modern Design,” 3.
3. Kepes, “Function in Modern Design,” 3.
4. Kepes, “Function in Modern Design,” 4.
5. Kepes, “Function in Modern Design,” 4.
6. Kepes, “Function in Modern Design,” 5.



Figure 1: Book cover of *Language of Vision* by György Kepes. (Chicago: Paul Theobald, 1944.)

human. Kepes' claims are, as I will argue, in keeping with his ambitions for design in the post-World War II era that takes as its objective the mobilization of "the creative imagination for positive social action."<sup>7</sup>

Kepes' claims for function, or, at least a consideration of its early formation, are in keeping with his concept of "dynamic iconography," first articulated in his book *Language of Vision*, published in 1944 (figure 1). By "dynamic iconography," Kepes means visual communication's ability to integrate (to make material so as to make perceivable) the dynamism of the modern world. "Thinking and seeing, in terms of static, isolated things identical only with themselves," Kepes writes in *Language of Vision*, "have an initial inertia which cannot keep pace with the stride of life, thus cannot suggest values—plastic order—intrinsic in this dynamic field of social existence."<sup>8</sup> If design ceases to be dynamic (to turn sclerotic) it will not inspire "positive social action," according to Kepes. As early as 1944, he notes the "failure in the organization of that new equipment with which we must function if we are to maintain our equilibrium in a dynamic world."<sup>9</sup>

### 3. Kepes, Walter Benjamin, László Moholy-Nagy, and Jan Tschichold

As I've previously observed, Kepes' "dynamic iconography" resonates with the German critic Walter Benjamin, and his assertions that mechanical reproducibility fine-tuned visuality, as in Benjamin's comments on the "optical unconscious" and the deepening of both the perceptual and "apperceptual."<sup>10</sup> Like Benjamin, Kepes argues for the capacity of communications technologies to both prescribe and inscribe new patterns of human behavior. Both Kepes and Benjamin claim that human subjectivity is an effect of technologies of mechanical reproduction. This is how humans come to read, or take readings of the world in their efforts to measure their mimetic capacity and to internalize new habits. A clear source for Kepes on these points is the fellow-Hungarian and former Bauhaus master, László Moholy-Nagy. It was Moholy-Nagy's efforts as head of the School of Design—formally the New Bauhaus and now the Institute of Design at IIT—that brought Kepes to Chicago and that established him as head of the Light and Color Department. There are aspects of Kepes' "dynamic iconography" that draw on Moholy-Nagy's 1923 essay "The New Typography, and his Dynamic of the Metropolis" from his 1925 Bauhaus book, *Painting, Photography, Film*. (Frederick Schwartz notes the influence this book had on Benjamin. And my colleague Annie Bourneuf points out that Moholy-Nagy claims typography is transformed by developments in new optical and lighting technologies.) Also, Kepes' "dynamic iconography" shows clear affinities with Jan Tschichold's *The New Typography* from 1928. This is especially the case where Tschichold argues that typography must acknowledge its situatedness, that its dynamism is predicated on its attunement to its moment. That is to say, that the "new" in *The New Typography* is its being-of-the-moment.

### 4. Kepes and the Chicago School of Psychology

It's tempting to place Kepes' concept of "dynamic iconography" solely within the context of *The New Typography* and Benjamin's media aesthetic theory. Closer to home (that is Chicago, at the time of writing and editing *Language of Vision*) and closer to concepts of human social interaction, however, Kepes found an important resource in the University of Chicago philosopher Charles Morris. Working with Moholy-Nagy, Morris had contributed "The Intellectual Program of the New Bauhaus," and had taught philosophy at the school. Importantly, as I first reported elsewhere, Morris played a significant role in the development of the book's symbolic theory of vision. While *Language of Vision* is a study of "optical communication," a culmination of experiments that Kepes carried out while teaching in Chicago, it was Morris who had informed the author's formulation of, in Kepes' words, a "sign system based upon a correspondence between sensory stimulations and the visible structure of the physical world."<sup>11</sup>

Morris had first arrived at the University of Chicago to study with the Chicago School pragmatist George Herbert Mead. (Named by William James, the Chicago School of Pragmatists included John Dewey, James R. Angell, Edward Scribner Ames, Addison Moore, and James H. Tufts.) Collectively, the Chicago School is known for their theorization of the organism in its environment, and behavioral interactions they refer to as "experience." As Bruce Kuklick explains, "The quality of this interaction in human experience displayed mind."<sup>12</sup> Thus, a quality of a mind, its ability to attain high levels of cognition, is predicated on the recognition of complex signals that shape behavior. Communication and behavior are key aspects of Mead's behavioral theory of signs. And, Mead's case for "pragmatics" as an aspect of semiosis, is of critical importance to Morris's understanding of the function of communication. Morris explains, pragmatics "deals with the biotic aspects of semiosis, that is, with all the psychological, biological, and sociological phenomena which occur in the functioning of signs."<sup>13</sup> Whereas, semantics is the study of the relation between signs and objects, pragmatics is the study of the relationship between signs and interpreters and the "function" of signs in social relations. The kinds of relationships that pragmatics attends to is best expressed in Mead's reference to a snarling dog, which calls out appropriate responses in interpreters. Such a gesture, from a pragmatic point of view, "affects human sensibility on every level of sensuous experience" (here I quote Kepes from his lecture on "Function in Modern Design"), which in turn results in a response. Beginning in 1939, Morris develops Mead's pragmatics into a theory based on the vital role that signs play in the formation of human behavior and human culture. In "Science, Art and Technology," Morris proposes that a theory of signs assists in gaining "insight into the essentials of human culture." Significantly, Morris defines human culture as a "web of sign-sustained and sign-sustaining activities."

7. Kepes, *Language of Vision*, 14.

8. Kepes, *Language of Vision*, 202.

9. Kepes, *Language of Vision*, 12.

10. Benjamin, "The Work of Art in the Age of Mechanical Reproduction," 235.

11. Kepes, *Language of Vision*, 67.

12. Kuklick, *A History of Philosophy in America: 1720-2000*, 182.

13. Morris, *Writings on the General Theory of Signs*, 43.

Morris provides Kepes with a link to Mead’s pragmatic functionalism, whose influence is crucial to the elaborations on “dynamic iconography” in *Language of Vision*. Wherever Kepes mentions the need for “readjustment” as a response to his sense of an all-pervasive sense of disorder, chaos, and what he identifies as a “tragic formlessness,” he echoes Mead’s observations on human conduct (or habit) where it, in Mead’s words, “is the sum of the reactions of living beings to their environments ... .”<sup>14</sup> The self, according to Mead, is formed from responses to environmental stimulus, and responses become meaningful, “when it is indicated by a generalized attitude both to the self and to others.”<sup>15</sup> As Morris comments on Mead’s pragmatics, “At these complex levels of semiosis, the sign reveals itself as the main agency in the development of individual freedom and social integration.”<sup>16</sup> In this sense, Kepes’ “language of vision” can be considered as a system of behavior from the point of view of pragmatics and a theory of significant symbols. Change the symbol and you change, or readjust, human conduct. Therefore, when Kepes expresses a desire for “educating man to a contemporary standard,” he is stating the function of the symbol as a means to form a more coherent social world.<sup>17</sup> Let me state this in terms of the meeting in Cambridge, where I began this talk: The efficient symbol functions as a tool for, in Kepes’ words, “the design of man as an individual and as a member of society.”

Certainly, this is the function of the book, especially when considered within the context of neo-humanist educational reforms at the University of Chicago, and its focus on the Great Books program initiated by Robert Maynard Hutchins and Mortimer Adler. As my colleague Lara Alison has observed in her unpublished paper on Container Corporation of America’s “The Great Ideas of Western Man” campaign, the School of Design, under Moholy-Nagy’s direction, had adopted similar reforms to its curriculum in the mid 1940s (just at the moment when Kepes left Chicago for Texas, and, soon after, for Cambridge). In Kepes’ case, he gestures toward this turn where, in his address to the *Graphic Forms* audience, he asserts that over-specialization in education, and life in general, drains, dulls, and deforms human “emotional unity.”<sup>18</sup>

In that same lecture at the Fogg Museum in 1949, Kepes states, “It is time now for redirection. Let us discipline our thinking by tracing all that we are doing or are intending to do to the original purpose, the human purpose.”<sup>19</sup> It seems to me that at this particular stage in Kepes’ thought, he becomes dissatisfied with the potentially post-humanist direction of “dynamic iconography” and pragmatics (how both, for example, too easily align with mechanical theories of behavior and human responsiveness to environment, as in cybernetics). At least he makes the case for reintroducing the human element in the pragmatic enterprise. It is my sense that his dissatisfaction is not only directed at this audience, but also at himself. This is especially the case where he asks his audience to consider what it is that the design of forms of visual communications, specifically the

book, can do to illuminate the pathways of a new direction, a direction that takes seriously the better functioning of human kind. Dynamic iconography as influenced by Morris and Mead, perhaps, allows the human to withdraw too far into the background, and thus lending little to no “distinction to the works appearing in the foreground as separated things,” to refer back to Kepes’ Sullivan quote. When Kepes invokes Sullivan, he consciously or otherwise reveals the humanist origins of Mead’s pragmatics, and thus acknowledges one Chicago school’s influence (that of architecture) on another Chicago school (that of philosophy). Indeed, Hugh Duncan has observed Sullivan’s influence beyond architecture, which included Chicago School pragmatists like Mead (and Dewey), especially Sullivan’s idea that the development of human social identity is linked to designed environments in which social interactions occur. In seeking origins, Kepes reasserts the fundamentals of dynamic iconography (as influenced by Morris and Mead). But, in reasserting the fundamentals of dynamic iconography, he is careful not to align its motivation with mere functionality, which he worries is too far afield from the local reality of human purpose. Kepes ends his lecture with this thought: “If graphic forms are made to function for man’s welfare in their fullest range, we may hope that we will one day fulfill our obligation and make truth [...] truth again and not a slogan.”<sup>20</sup>

14. Mead, “A Behavioristic Account of the Significant Symbol,” 159.

15. Mead, “A Behavioristic Account of the Significant Symbol,” 163.

16. Morris, *Writings on the General Theory of Signs*, 50.

17. Kepes, *Language of Vision*, 13.

18. Kepes, “Function in Modern Design,” 12.

19. Kepes, “Function in Modern Design,” 7.

20. Kepes, “Function in Modern Design,” 14.

## 5. Misunderstandings and Loss of Meaning

To Kepes’ ear, the dictum “form follows function,” through overuse, has become meaningless. It is lifeless, a dead body, a hollow phrase that, in an age fixated on speed and quantity, is more often used as an excuse, rather than as a statement of truth. It is as if he is saying to his audience: Your principles are misunderstandings. We no longer have a “clear view” of the use (or function) of “function,” and by extension, nor do we have a clear view of “form.”

A loss of meaning as a theme is important within the context of a meeting on “graphic forms.” Forms are meaningless, because their functions have lost their meaning in the post-war age of affluence. And thus, forms created with function in mind are clouded, blurred even. According to Kepes, we have no clear view of the human, either.

In his talk, Kepes demonstrates that, in order to project authority, a school of thought and/or practice must embody an awareness of how its proposals are situated in relation to a past from which the original issued, and could exhibit sensitivity to its return into a contemporary moment. (Hence, Sullivan’s place within Kepes’ *The New Landscape of Art and Science*.) This is what he means by wanting to “subject our professional catchwords to strict scrutiny.”

In no way do I mean to indicate that Kepes wants to replicate a past school or tradition on the topic of function. What Kepes seems to want to take hold of is something of the accomplishments of earlier practitioners, their acknowledgement of the local realities of human purpose, by addressing what designers took to be the relevant standards of their practices. He achieves this through recognition of “our professional catchwords” as established in and through the work of Sullivan, but also through a new interpretation of “form follows function.” In his talk, Kepes exhibits a self-critical awareness of such standards, which entails his wrestling with a delusion that arises when slogans are disconnected from tradition, or cultural continuity. In this sense, and without such awareness, schooling in functional design will be for naught.

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# PART I ESSAYS

S. R. Crown Hall, IIT College  
of Architecture. Photo courtesy  
of William Zbarán.



# MIES COMES TO GREECE: A. JAMES SPEYER AT NTUA

Between 1957 and 1960, A. James Speyer served as a Fulbright visiting professor at the National Technical University of Athens (NTUA) in the Faculty of Architecture. The Fulbright program was established to foster mutual understanding across the world, and Speyer was a choice candidate for such cultural exchange. An American, Speyer had studied and become a professor under Mies van der Rohe at IIT. In 1957, it was his time to travel to Athens, the city of the Parthenon. Although only a brief exchange, one would think that his three years in Greece promoted the vision of the Fulbright program: the American introduced his Greek students to the work and the educational method of the great German master.

Eventually, many of Speyer's students became important figures in the local architectural community. Nevertheless, Greek architectural historians have only superficially studied Speyer's impact. The main source of information on his work remains the oral history recorded by Pauline Saliga in 1986. Other historiographical details were independently contributed by some of the former students.

Does this mean that Speyer's work will soon be lost to history? Seventy years have passed, and only a few of his former students are still available for an interview. In Athens, Dimitris and Suzana Antonakakis were available to meet me in their office. My efforts in traveling to Chicago immediately sparked interest, and Antonakakis showed me one of her student projects she has kept all these years, together with her beautiful memories. The project is published here for the first time (figures 1 and 2). How then was Speyer received in Athens?

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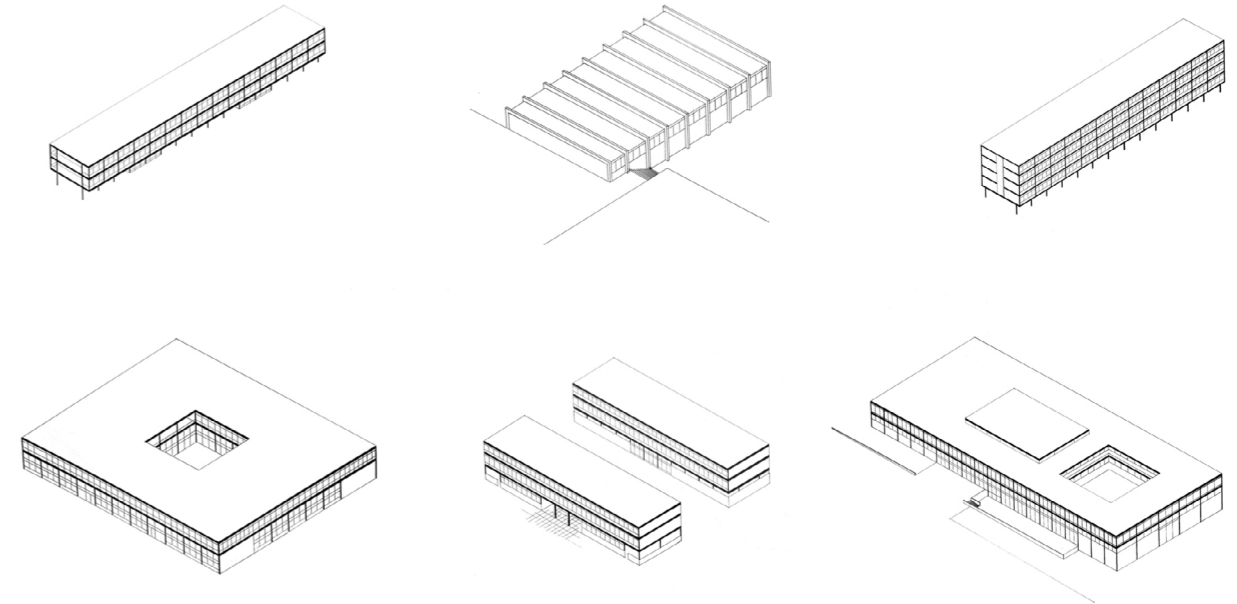
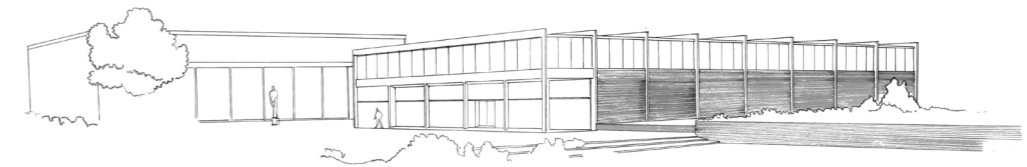
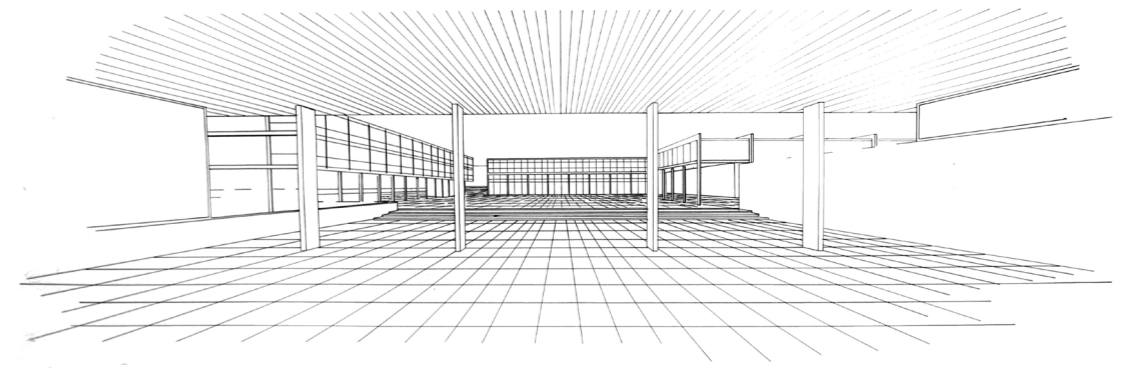


Figure 1: Design Thesis project by Suzana Antonakakis under A. James Speyer. (Source: Suzana Antonakakis.)

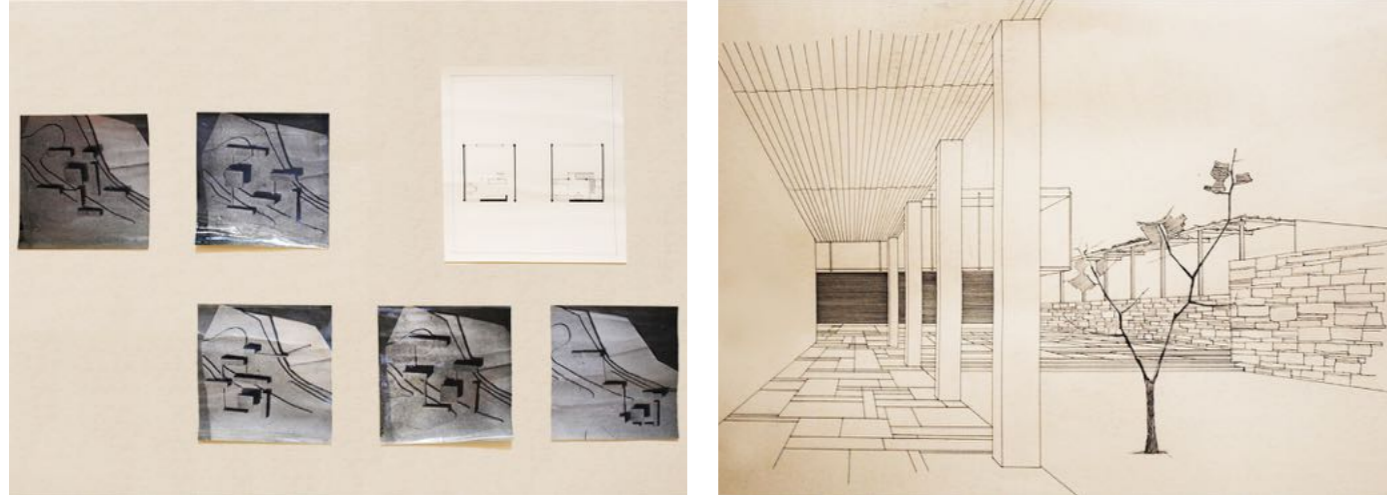
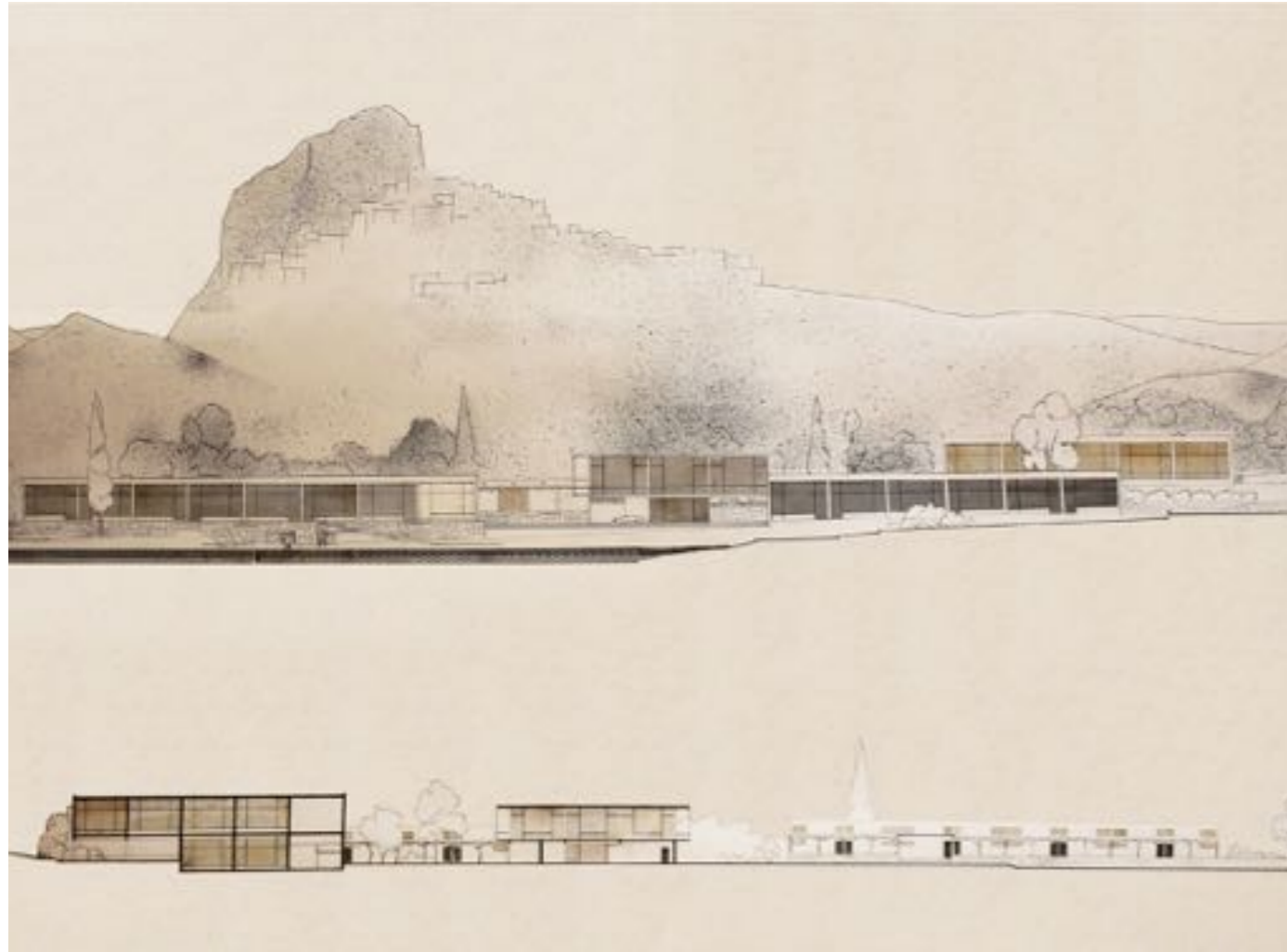


Figure 2: Design Thesis project by Suzana Antonakakis under A. James Speyer. (Source: Suzana Antonakakis.)

By the late 1950s, almost everyone at NTUA venerated three great professors, namely, Michelis, Pikionis, and Ghikas, each of whom pioneered a different area of expertise. However, this circumstance also meant that students did not necessarily trust foreign newcomers such as Speyer. Nevertheless, partially with support from Michelis, the Fulbrighter came fast in the students' favor. To convince myself, I looked at the numbers: In 1957, Speyer supervised 27 students, then 38, and then 60 in the following two years.

After his remarkably quick adaptation to the Athenian environment, the NTUA gave Speyer absolute freedom in organizing his studio. In a historical interview with Saliga, Speyer mentioned that he was free to do projects "related to the kind of thing, that [he] had been exposed to as a student with Mies, and that [he] had taught as a professor under Mies."<sup>1</sup>

This development went hand in hand with Speyer initially teaching architectural design studio, but later supervising final design theses, and eventually completely replacing the Chair of Architectural Compositions, which would otherwise have been in charge of the theses.<sup>2</sup> In line with these facts, the oral history records suggest that students tried to benefit as much as they could from Speyer's teaching strategy and knowhow.<sup>3</sup>

Speyer organized his design studio mainly following the contemporary model at IIT. In particular, he valued the Miesian studio culture and replicated it in Athens. He worked closely with each student, which allowed him to monitor the designs in progress. For this reason alone, one may say that Speyer was strict to today's standards. Rules, practice, and discipline came at the cost of free individual expression. At every design stage, the professor demanded from each student three different design proposals, but students did not initially perceive that this created a freedom of choice.<sup>4</sup>

Despite Speyer's strictness, Suzana Antonakakis appreciated her master as an approachable professor who knew how to pay attention to the needs and concerns of each individual student. Ironically, this quality might have been the result of the same close collaboration between professor and students. Speyer also had a contribution in helping students "digest" the subjects that the other Greek professors taught, mainly through his wide knowledge of references from the architectural past.<sup>5</sup>

What may somehow seem a departure from the Miesian model was the way Speyer came up with architectural examples to explain his own approach. This led to a mode of design that included architectural history.<sup>6</sup> Not surprisingly, Antonakakis told me that the students perceived Speyer as an "encyclopedia of modernity." His knowledge of the International Style, and the ease with which he recalled buildings and people was a luxury very much valued. In 1958, Mies was prominently featured in the 79th issue of *L'Architecture d'Aujourd'hui*. This fact increased Speyer's and his master's reputation in Greece, outside academia.

Speyer tested some of the most progressive methods of architectural design at the time in a context deeply tied to history and cultural heritage. This circumstance makes him more than just a transmitter of the Miesian model of education. For Speyer, the cultural heritage and the sense of place were essential parts of architectural design. What then remained was a great, perhaps fruitful, contradiction.

Is Speyer a lost legend? The Antonakakis couple, as well as the few remaining records, tell the story of a forgotten legacy, embellished by the passage of time—but a beautiful legend no longer told. It is indeed paradoxical that the three years Speyer spent in Athens remain, until today, neglected in the history of modern Greek architecture. Did his teaching continue influencing the work of young architects in the troubled decade of the 1960s? Do historians have methods to recover this past when they write the history of the few big influencers, or will they simply leave out people like Speyer, whose students still dream of their time with him?

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## Notes

1. Saliga and Speyer, interview, 97.

2. Antonakakis, "James A. Speyer: The Fertile Alienation," 5.

3. Saliga and Speyer, interview, 93.

4. Antonakakis, "James A. Speyer: The Fertile Alienation," 9.

5. Antonakakis, "James A. Speyer: The Fertile Alienation," 6.

6. Antonakakis, "James A. Speyer: The Fertile Alienation," 5.

# THE CHICAGO SCHOOL IN THE AMERICAN CULTURAL PROPAGANDA IN SPAIN

## Abstract

In the 1950s, Spaniards could hardly afford the expenses of traveling abroad, and Spanish architects scarcely read foreign architectural magazines because of their expense. Surprisingly, even at this time when everything else failed, the Chicago school still reached the Spanish architects over unexpected, winding pathways. In 1953, the United States and Spain signed a political agreement that offered US military and economic aid in exchange for an alliance against Russian communism. However, the Spanish population was prejudiced—reason enough for the American Embassy in Madrid to develop a propaganda program in order to improve the perception of the United States and help (although under political oppression) with the renewal of agreements in upcoming years. One of the main points of the propaganda program was the culture. The US used architecture as a cultural weapon. At the time, architecture was one of America's strengths because of the migration of European masters to the US, the development of new materials and techniques, etc. Thanks to the work of the "Casas Americanas," information about American architecture spread to several cities in Spain. In this article, we will study the dissemination of the Chicago School in the main periodical publications of the "Casas Americanas." As we will see, they were sent to an important segment of the Spanish population—the architects.

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Figure 1: "Escalera IIT," *Atlántico*, no. 15, 1960.

## Periodic Broadcasting Media

*Noticias de Actualidad* was the main tool used by the Americans in Spain to show the American Way of life. The readership of this informational magazine was 65,000 in 1956. The second main publication by the US Information Service (USIS) was *Atlántico, Revista cultural* (figure 1).<sup>1</sup> This review was composed of long analytical essays written by American authors and some Spaniards sympathetic to the US.<sup>2</sup> They dealt with every cultural topic, from poetry to politics, from national identity to the arts. In both magazines, we find articles related to architecture, some of them about the Chicago school.

In *Noticias de Actualidad*, we find an article related to Louis Sullivan, titled "This man embellished the skyscrapers" (figure 2).<sup>3</sup> The article explained the beginning of his career and some aspects that stimulated his work: "In that period of time around the end of the last century, American architecture was a mixture of the most different historical styles. But Sullivan was a man who looked to the future and he was not influenced by the routine."

## Notes

1. "The two USIS periodicals are important vehicles for cultural material. *Atlántico*, a cultural quarterly devotes its 120 pages to presenting a wide range of US cultural interests and achievements through articles by leading American writers. *Noticias*, although serving several other purposes, also is strong in cultural content: over 100

articles during the year, of which 42 were on literature, art, music, education, and architecture." USIS Country Assessment Report: SPAIN 1959.

2. "The review has been fortunate in receiving abundant and spontaneous contributions from Spanish authors, many of which have been publishable within the magazine's objectives. They have greatly



Figure 2: "Este hombre embelleció los rascacielos," *Noticias de Actualidad*, Febrero 1957, 9.

An *Atlántico* article about organic architecture is started with a quote about the importance of Chicago in the architectural world: [the construction in 1833 of the Saint Mary Church by Washington Snow uses the "balloon frame,"] "consisting of an ingenious procedure in which they used light wooden strips fastened among them, reaching an extraordinary lightness and economy."<sup>4</sup>

In the same article, they briefly present Chicago's architectural history (figure 3). They explain Frank Lloyd Wright, starting with the footprint in the decades of 1880 and 1890, and the "Chicago spirit, expression of a big collective effort looking for a reasonable and sincere solution to the huge problems caused by the vertiginous growth of the population." This effort achieved technical, constructive, and urbanistic innovations that defined a "new esthetic language," but with the World's Columbian Exposition in 1893 in Chicago they followed some other directions.<sup>5</sup> Louis Sullivan was the only one who, with Dankmar Adler, designed a building appropriate to the historical moment, without following the Beaux-Arts style of the rest of the building. "Only Louis Henry Sullivan kept the torch lit. His fight was really heroic against adversity, the lack of appreciation and eclecticism. His principle, according to which form follows function, is essential to locate the historical beginning of organic architecture."

assisted in giving the publication an honest mutuality of interest character. A check of the first six numbers shows that 16 of 33 articles (48%) are of Spanish authorship." USIS Cultural Review, *Atlántico*, August 27, 1957.

3. "Este hombre embelleció los rascacielos," *Noticias de Actualidad*.

4. Aguilera Cerni, "Sobre el contenido de la arquitectura orgánica," 69-70.

5. "La Exposición adoptó un anacrónico e incongruente clasicismo mercantil que tardó poco en avasallar el dudoso y vacilante gusto de las clases más poderosas, sobreviniendo una terrible proliferación de nobilísimas y grandilocuentes imitaciones de los estilos históricos." Aguilera Cerni,



El Merchandise Mart (izq.), Chicago.

Figure 3: "El Merchandise Mart, Chicago," *Atlántico*, no. 9, 1958.

The article "Constitution of an architect" has an interesting point of view. "It is not impossible that the most important element born in Chicago from the architectural point of view was not the Transportation Building or the Meyer-Schlesenger stores, but the coordination principle. Burnham understood this principle when he became master architect; Adler intuitively used it when designing the Auditorium building (...). Burnham and Adler were the heroes, not Sullivan and Root—although Burnham and Adler's ideas stopped being beautiful when they were accepted and implemented by other architects."<sup>6</sup> This article is followed by pictures exemplifying American architecture. More than half of the pictures are from Chicago buildings (figure 4).

### Conclusion

What is remarkable in all the studied publications is the search for the American question, the meaning of this concept, the definition of American, and, more specifically, the image of authentic American architecture, even to the point of becoming obsessive in the *Atlántico* review.

To this point, the Chicago School played an important role, because from its roots it is without a doubt originally American. Even more, some of the buildings built in Chicago

represented the United States abroad. That is the reason why the Chicago School, even though it was a background topic, offered an extraordinary overview of American architecture. *Atlántico* gave importance to it as part of the program to understand the development of American architecture, even if it is not a relevant topic. They transmitted an impression of Chicago as a fundamental city, but they did not stop to explain in detail the reason why. We can conclude that through this publication, the Spanish people obtained a partial view of Chicago, and as a result they wanted to know more about the city and its architecture.

The image of Chicago was engraved in the mind of the Spaniards through the pictures shown in the exhibitions about American architecture, from the first skyscrapers of the original Chicago school to the houses of Frank Lloyd Wright (figure 5) to the works of Mies van der Rohe and his disciples. To the architects who traveled to the United States in the 1950s and 60s, it was mandatory to visit Chicago to know first-hand the very well-known buildings there, even more so than New York.

<sup>6</sup>"Sobre el contenido de la arquitectura orgánica," 69-70.

6. Translated by the author. In the original: "No es imposible que el elemento más importante que nació en Chicago desde el punto de vista de la arquitectura no fuera el Transportation Building, o los Almacenes Meyer-Schlesenger, sino el principio de coordinación que comenzó a

ser comprendido por Burnham entonces y que comprendió más plenamente cuando se convirtió en planeador de grandes ciudades, principio que fué adaptado intuitivamente por hombres como Adler cuando concibieron el Auditorio de Chicago. Fueron éstos los hombres que anunciaban el porvenir, Burnham y Adler, no Sullivan y Root, aunque los primeros no fueron tampoco hombres completos y sus

ideas dejaron de ser bellas cuando se separaron los autores de ellas." "Constitución de una arquitectura," 56.



A la derecha, Torre del Tribune. Chicago.

Figure 4: "Torre del Tribune, Chicago," *Atlántico*, no. 9, 1958.

FRANK Lloyd Wright, rebosante de energía, llena su mente turbulenta de proyectos, continúa a los ochenta y ocho años de edad la brillante carrera que ya cuenta medio siglo de duración. Arquitecto heterodoxo desde los comienzos de su carrera, siempre ha reinado en torno suyo una violenta polémica. Hoy, ya consagrado, es seguro que pasará a la historia como uno de los grandes arquitectos del siglo XX.

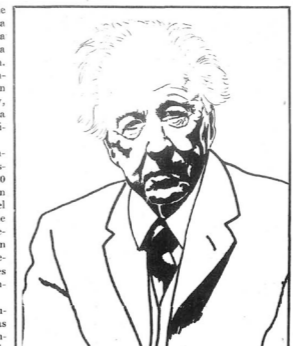
Wright alcanzó la fama en Europa antes de ser reconocido en su país, los Estados Unidos. Ha construido unos 770 edificios, algunos de los cuales cuentan entre los más bellos y sorprendentes del mundo. Hoy se dedica a terminar uno de los más originales de cuantos ha concebido. Ocupará una manzana entera en un barrio de Nueva York —es su primera obra en esa ciudad—, que era antes reducto de desconcertantes castillos franceses de paotilla.

Se trata de un museo en donde se conservarán las obras de arte coleccionadas por un magnate minero, S. R. Guggenheim. Será un edificio cilíndrico de seis plantas, con un patio central, también redondo, alrededor del cual desarrollará sus espirales una rampa larga y suave de 1.200 metros, formando una sola nave de arriba a abajo. Los muros de la rampa estarán inclinados de manera casi imperceptible, y de ellos colgarán los cuadros, iluminados por luz cenital.

En cuanto a proyectos, el maestro está dando los últimos toques al que será el edificio más alto que jamás ha construido el hombre: un bloque de oficinas de 310 plantas, con una altura de 1.600 metros, que se alzará en Chicago mirando al lago de Michigan y al lado del cual el Empire State Building, de Nueva York, hoy el edificio más alto que existe, quedará con sus 448 metros de altura convertido en una modesta casita.

Es parte de las doctrinas revolucionarias del gran arquitecto que las casas —sobre todo las viviendas— han de ser construidas orgánicamente, de dentro a fuera, acoplándose al carácter individual de las vidas que se desarrollarán en su interior, y que el exterior debe fundirse con el interior sin solución de continuidad. Y, en efecto, en muchas de sus casas, dijérase que muros y tabiques, lejos de ser separaciones son eslabones que unen las partes de la estructura para formar un conjunto articulado y armónico. En cuanto a la habilidad de Wright para acoplar las casas a la «atmósfera» circundante, ha demostrado una capacidad casi milagrosa.

Nació Wright en una familia modesta de Wisconsin el año 1869. Decidió su madre muy



## Frank Lloyd Wright, arquitecto genial

Figure 5: "Frank Lloyd Wright, arquitecto genial," *Noticias de Actualidad*, Octubre 1957, 11.

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# CHICAGO’S “SKYLINE OF SIGNS”

## Abstract

In the November 1933 issue of *Signs of the Times*—the leading trade publication of the outdoor advertising industry—Walter D. Krupke, a general sales manager for the Chicago-based Federal Electric Company, heralded “Chicago’s Million-Dollar Skyline of Signs.”<sup>1</sup> The skyline to which Krupke referred to was the particular stretch visible from the recently opened Outer Drive (now Lake Shore Drive) that connected the South Side through the city, passing the exposition site for “A Century of Progress,” and up to the North Side. This stretch was anchored by the dramatic frontage of tall buildings, forming a street wall on Michigan Avenue and facing the open expanse of Grant Park. While these new skyscrapers seemed to define the image of Chicago through a rising skyline, for Krupke, the architecture was secondary, mere support for giant electric advertising displays, also known as illuminated spectaculars. These outdoor advertising structures—and the potential of their visibility—played as vital a role in representing civic progress and urban advancement as any building in this same aerial territory. They signaled not only the city’s commercial vitality as a growing consumer market and burgeoning metropolis, but also a cultural vitality, prompting a writer in 1930 to discern the parallel, “The improvement and expansion of the Outdoor Advertising medium, in Chicago, is commensurate with the progress of the city.”<sup>2</sup> In effect, architecture became a backdrop, overtaken by outdoor advertising structures that marked Chicago’s modernity through a “skyline of signs.”

Krupke estimated that this particular stretch of the skyline had a value of more than \$1,000,000 in terms of costs for current displays and potential construction along this thoroughfare and on top of the buildings. Notably, he placed the area’s “veritable constellation of electrical displays” in the same league as New York’s “Great White Way” of dazzling signage in and around Broadway in Times Square. This comparison demonstrated Chicago’s metropolitan rise, in a manner not unlike many other cities across the country that heralded their own “Great White Way.”<sup>3</sup> A photo spread of three large spectaculars accompanied the article showcasing some of the current electrical advertising displays in the city. It featured recent installations in Chicago by the Federal Electric Company for different cleaning products. The locations were not identified, or identifiable from the

photographs, but all were mounted on top of buildings, rather than attached to the side or freestanding. They were also sizable, ranging from 79-feet long by 125-feet high, 36-by-50 feet, and 52-by-25 feet. Supported by a structural steel frame, the sign letters and symbols were porcelain enamel, with both neon and incandescent lighting, which flashed on and off.<sup>4</sup>

Krupke’s intentions, naturally, were to valorize spectaculars, his company’s product. As an outdoor advertising medium, he stressed the “quality of performance” through repeated and regular viewings. This attribute of duration was also an important aspect of spectaculars, since “each repeated view of the huge display enhances the thought of dependability.” Their “sheer size and impressiveness” demonstrated the company’s resources, stability, and faith in their product

being advertised, which, he noted also benefited local businesses by advertising products sold in local stores. Despite their large size and striking visual effects, Krupke interestingly noted how spectaculars were removed from the general public’s conception of them: “The immense size of these spectaculars passes unnoticed because they are rarely seen except from a distance of 200 feet or more.”<sup>5</sup> Because these spectaculars were placed atop buildings, people could not see them up close, and therefore could not comprehend their structural mass in relation to their own body. Because they were placed at a remove, and seen from a distance, spectaculars posed a unique relational problem for the public.

The legacy of Daniel Burnham and Edward H. Bennett’s 1909 “Plan of Chicago,” which set out to organize the physical infrastructure and improve the architectural quality of the city amidst dramatic urban growth and development, provided for an especially accommodating framework for outdoor advertising structures to appear. An article in the April 1930 issue of *Advertising Outdoors* described the appealing qualities of the city for the industry: “Fast moving, fast growing Chicago will always be a model Outdoor Advertising city, because of its broad extent, its systematic layout, and ample provision for every conceivable outdoor interest.”<sup>6</sup> In addition to Chicago’s position as a national railroad hub, it noted the extensive, orderly network of wide boulevards, street grid, and highways for automobiles, buses, and streetcars that provided ample, well-suited locations for outdoor advertising. The physical plan of the city itself seemed ideally configured to install displays of varying types: “Nowhere is there a city so adaptable for an exposition of the medium of Outdoor Advertising.”<sup>7</sup>

A photograph illustrating the article pointed out how the shape, plan, and activity—the adaptability—of the city made it ideal for outdoor advertising. Amidst the bustle of automobile traffic, a street-level view of Michigan Avenue looks north to show how a colossal outdoor advertising installation at Randolph Street stood out in and as part of the downtown “Loop” business district. The freestanding structure at the northeast corner of the intersection consisted of a spectacular—a monumental, illuminated display—for Chevrolet automobiles mounted above a large billboard for Maxwell House coffee.<sup>8</sup> The composite outdoor advertising structure, installed by the Federal Electric Company of Chicago, emblazoned with company names, logos, and slogans towers over the wide boulevard, ideally positioned to face the motorists in their vehicles, pedestrians on the sidewalk, and train passengers on the Illinois Central Railroad tracks that ran parallel to Lake Michigan. It joined the surrounding urban fabric with the Chicago Public Library completed in 1891 catercorner across the street; the Edward H. Bennett-designed peristyle completed in 1917 on the southeast corner of the intersection, marking the northwest corner of Grant Park; and a range of skyscrapers completed in the previous decade, most prominently the Wrigley Building, completed in 1924, standing in the

distance at the vanishing point of Michigan Avenue in the photograph. This combination of planned infrastructure, civic structures, commercial skyscrapers, and public parks, along with major sporting events and conventions elsewhere in the city, signaled Chicago’s burgeoning modernity, placing it in an admirable position in relation to its peers, both national and international. “The new Chicago is a city so gloriously modern, that it is held up as a model to inspire emulation in staid old Eastern and European cities.”<sup>9</sup>

The potential of the Chicago skyline for outdoor advertising was best captured in a panoramic view of that city that complemented the photograph of the Chevrolet and Maxwell House display structure in the *Advertising Outdoors* article. The image, a Kaufmann & Fabry print of a 1927 painting by William Starbuck Macy, shows an expansive vista of the city, stretching from the 29-story Stevens Hotel (1927) and Buckingham Fountain (1927) at the southern edge on the left end of the composition up to the 30-story Wrigley Building (1924) and 36-story Tribune Tower (1925) that mark the northern edge of the view on the right end of the composition. The broad expanse of Grant Park and railroad tracks along the lakefront protected this area from visual obstruction, allowing this view of the Chicago skyline to become the defining image of the city, and also a perfect canvas for outdoor advertising to proliferate for easy, prominent viewing by a large number of people. While for many this urban vista showing the dramatic rise of skyscrapers indicated the culmination of Chicago’s status as a modern city, for the outdoor advertising industry, its consummation only arrived with the installation of electric advertising displays and illuminated spectaculars atop it all.

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## Notes

1. Krupke, “Chicago’s Million-Dollar Skyline of Signs,” 19, 53.

2. Stokes, “Chicago—A Rich Market for the Outdoor Advertiser,” 6.

3. See John A. Jakle, “The Great White Way and Electric Sign Art,” 195–224.

4. “Cleansers,” *Signs of the Times*, 18.

5. Krupke, “Chicago’s Million-Dollar Skyline of Signs,” 19, 53.

6. Stokes, “Chicago—A Rich Market for the Outdoor Advertiser,” 4.

7. Stokes, “Chicago—A Rich Market for the Outdoor Advertiser,” 6.

8. By December 1933, the billboard, owned by General Outdoor Advertising, had been replaced by an advertisement for Sunkist oranges, “Outdoor Advertising—Where the People Are,” *Signs of the Times*, 11. And by December 1934, the Sunkist billboard had been replaced by a spectacular by General Outdoor Advertising Company measuring 35-by-72 feet with 3,000 lamps and 1,079 feet of neon tubing with animated

effects of an orange and trademark name, “Enlarged Sunkist Spectacular,” *Signs of the Times*, 82; and “Chicago, Ill.,” *Signs of the Times*, 73.

9. Stokes, “Chicago—A Rich Market for the Outdoor Advertiser,” 4.

# THE “OTHER” FARNSWORTH HOUSE

## Abstract

In April 1953, Elizabeth Gordon (1906–2000) launched an attack on elitist architects and the control they claimed over lifestyle and taste.<sup>1</sup> In her editorial for *House Beautiful*, Gordon condemned modernist aberrations for giving up on comfort and humanity. She saw the American values of common sense, unbound riches, and individual choice under threat. What had Gordon so alarmed was what she called “nothing more but a glass cage on stilts.”<sup>2</sup> Designed by Ludwig Mies van der Rohe (1886–1969) and completed in 1951, the Farnsworth House epitomized modern architecture (figure 1). A modest barn conversion from the same architect is its unlikely twin (figure 2). The parallel conception by the two related, yet distinctly different, buildings challenges the single-minded narratives of modernism.<sup>3</sup>

About 1947, American sculptor and art collector Mary Callery (1903–1977) acquired two timber barns on Long Island. She converted the larger one as her studio, while the smaller one—with Mies’s help—was to become the “Living Barn.”<sup>4</sup> Interventions were limited and materials modest, yet the hand of the architect is evident in the carefully made details as well as the well-calibrated relation to the landscape around it. The Farnsworth House and the Living Barn followed parallel timelines, shared similar programs, and matched each other in size. Like the Farnsworth House, the barn was spatially generous and subtly zoned, but whereas the Farnsworth House sought communion with nature, the Living Barn achieved a symbiosis of Callery’s and Mies’s work (figure 3).

Both Callery and Dr. Edith Farnsworth (1903–1977) were independent women and highly accomplished in their respective fields. Callery’s trajectory in life and art “was not a straight-edged highway, but curved, endlessly like the lithe lines of her sculpted figures, opening new vistas at every turn.”<sup>5</sup> In Callery, Mies found European sophistication paired with American candor. The integrity of her artistic vision and her openness when working together with others allowed her to realize significant collaborative projects, including this barn conversion. Farnsworth, despite being intelligent and cultivated, was not as aesthetically savvy and failed to imagine what life in a glass house might actually be like, and as a result she saw herself as “a dupe and a victim.”<sup>6</sup> What distinguished Callery were her intellectual sensibility and artistic imagination. As a sophisticated artist,

## Notes

1. For further detail, see Penick, *Tastemaker: Elizabeth Gordon, House Beautiful, and the Postwar American Home*, 115–128.

2. Gordon, “The Threat to the Next America,” 129.

3. This text relates to ongoing doctoral research under the supervision of Kathleen James-Chakraborty, Professor of Art History at University College, Dublin, Ireland.

4. Zaleski, *Long Island Modernism 1930–1980*, 216–223.

5. Adams, in Mary Callery, *Sculpture*, VI.

6. Farnsworth, letter dated March 1, 1951, quoted in Alice T. Friedman, *Women and the Making of the Modern House—A Social and Architectural History*, 140.

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Figure 1: Ludwig Mies van der Rohe with the model of the Farnsworth House, 1947. (Source: William Leftwich, photographer. Edward A. Duckett Collection, Ryerson and Burnham Archives, the Art Institute of Chicago. Digital File #198602.081216-03.)



Figure 2: The Living Barn, north elevation, 1975. (Source: Ludwig Glaeser, photographer. Canadian Centre for Architecture, with kind permission by Nicolas Köhler.)



Figure 3: Mary Callery, Seated Figure, looking toward the Living Barn, c1952. (Source: Private photo. Estate of Mary Callery.)



Figure 4: The Living Barn, exterior and flagstone patio, 1975. (Source: Ludwig Glaeser, photographer. Canadian Centre for Architecture, with kind permission by Nicolas Köhler.)



Figure 5: The Living Barn, post and beam structure, 1975. (Source: Ludwig Glaeser, photographer. Canadian Centre for Architecture, with kind permission by Nicolas Köhler.)



Figure 6: Living Barn, the main living area as seen from the sleeping loft above the kitchen and study, 1952. (Source: Gordon Parks, photographer. LIFE Magazine/Getty Images.)

educated client, and a person of “implicit womanly strength,” Callery exerted decisive influence on the shaping of the environment she lived and worked in (figure 4).<sup>7</sup> Evidently Farnsworth got the house that Mies wanted, whereas Callery got the house that she wanted. This stands in contrast to the image of the controlling and domineering architect that had emerged as a result of the Farnsworth trial—a narrative that suited Elizabeth Gordon so well.<sup>8</sup>

The historic barn was a simple post-and-beam construction, at once reminiscent of medieval half-timbered houses, or “Fachwerk,” familiar to every German (figure 5). Mies appreciated these vernacular buildings for their clarity of structure and integrity of form, and he admired the warmth and beauty they conveyed.<sup>9</sup> Making reference to vernacular buildings may have been natural to Mies, but within the architectural discourse at the time it was not. Sibyl Moholy-Nagy (1903–1971) introduced the concept of the vernacular, and her position was soon interpreted as a counter-image for the modern.<sup>10</sup> In 1957, after five years of writing, *Native Genius in Anonymous Architecture* was published. As a book on vernacular architecture written for architects and inspiringly illustrated, it was the first of its kind.<sup>11</sup> Although less polemical than Gordon, Moholy-Nagy looked equally critical at modern architecture, and evoked the Farnsworth House as an example of regressive modernism. She criticized the house, without naming it, for departing from the traditions of the American home. Advocating for a decidedly “organic” approach, both Gordon and Moholy-Nagy wanted to educate contemporary architects and their clients. Moholy-Nagy championed the “pre-conscious building” of the past as an inspiration for contemporary designers.<sup>12</sup> “I was influenced by old buildings, mostly very simple buildings,” Mies remembered, and he was impressed by their strength and enduring quality.<sup>13</sup> Looking ahead, Moholy-Nagy insisted, “As those builders of old, the architect of today has to create ‘an anonymous architecture for the anonymous men’ of the Industrial Age.”<sup>14</sup> Mies could not have agreed more.

The critique of Mies’ work focused on the Farnsworth House as technological, austere, and constraining. Its counterpart—native, supple, and accommodating—was largely ignored because no intellectual framework yet existed to appreciate a barn conversion as architecture (figure 6). Moholy-Nagy was among the first to address the ignorance (and arrogance) of a profession that valued only pedigreed designs. It is worth noting that all protagonists introduced here, except for the architect, are female. Callery, Farnsworth, Gordon and Moholy-Nagy belonged to a generation of remarkable women, all born in the first decade of the twentieth century. In the prime of their professional lives, in their mid-forties, and in their respective roles as clients, collaborators, and critics they actively shaped the direction of modern architecture as profoundly as the architects themselves.

The critique offered by Gordon and Moholy-Nagy resonated with a shift in architectural culture at the time. Both the Farnsworth House and the Living Barn were designed in a period of experimentation that was rich in diversity and innovation.<sup>15</sup> While other architects’ projects tried to capture the scientific and technological innovations that were about to change global culture, the Living Barn provided a counterpoint to their efforts. In the years that followed the completion of both the Farnsworth House and the Living Barn, Mies found himself pushed to one side of a dividing line that ran between modern and vernacular architecture—an angry dispute that would have made very little sense to him to start with because Mies’s modern architectural practice cannot be separated from his appreciation of old buildings. The editors of *House Beautiful* vilified European modernists, and Mies was often described as the lone hero of Modernism, who said little and thought less was more. Yet it turns out that his projects could very well be the result of creative dialogue, specific in their response to place and material and—most importantly—extremely generous in their response to people. It was left to others, architects of a younger generation, to fully appreciate and theorize this alternative approach.

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7. Adams, in Mary Callery, *Sculpture*, VII.

8. For details on the trial, see Schulze and Windhorst, *Mies van der Rohe: A Critical Biography*, 247–272.

9. Mies van der Rohe, “Inaugural Address as Director of Architecture at Armour Institute of Technology,” 191–195.

10. Heynen, “Anonymous Architecture as Counter-Image: Sibyl Moholy-Nagy’s Perspective on American Vernacular,” 469–491.

11. S. Moholy-Nagy, *Native Genius in Anonymous Architecture*.

12. S. Moholy-Nagy, *Native Genius in Anonymous Architecture*, 108.

13. Mies van der Rohe, *Conversations Regarding the Future of Architecture*.

14. S. Moholy-Nagy, *Native Genius in Anonymous Architecture*, 23. (Emphasis in the original.)

15. For details, see Barbara Miller Lane, *Houses for a New World: Builders and Buyers in American Suburbs, 1945–1965*.

# THE SCHOOL OF ARCHITECTS AND ENGINEERS: MIES, KORNACKER, AND THEIR FOLLOWERS

## Abstract

From the times of the first Chicago school of architecture, architects and engineers collaborated in Chicago, forming teams, often in pairs, in order to respond to the needs of their time, developing the structural typology of high-rise buildings, and characterizing them with their own expressions. Continuing this legacy, Ludwig Mies van der Rohe coined the term “structural architecture,” and collaborated with the engineer Frank J. Kornacker. The duo and their term eventually epitomized the rise of a new school, which in turn left its legacy in the city and abroad.<sup>1</sup>

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Figure 1: South Elevation, Graham Resource Center, Illinois Institute of Technology. (Source: J. C. Brownson, Master's thesis, IIT, 1954.)

## 1. The Collaboration Between Mies and Kornacker

“An architectural curriculum is a means of training and education. It is not an end in itself. A curriculum without a philosophy is not broad and wide, not even neutral, but at the Illinois Institute we are concerned, among other things, with the idea of structure, structure as an architectural concept.”<sup>2</sup>

All of the ideas that Mies used to create the new curriculum reached their maximum expression in the graduate program. Mies and Kornacker collaborated in order to instill this philosophy of “Structural Architecture” in their graduate students, who worked on the design of a complete architectural project as a final master's degree thesis. Mies and Kornacker supervised five theses that proposed architectural solutions in which the structural component was the protagonist, creating open spaces: Two of them used unidirectional structures, while the other three used structures in two directions.

Jacques Brownson presented his own house for his master's degree thesis, with the aim of exploring the possibilities offered by the new industrial materials in the design of domestic projects. Brownson proposed a continuous space without any interior supports, meaning that it could be subdivided in any way. The structural system consisted of four rigid frames from which the roof was suspended. Having chosen the structural system, the subsequent decision-making process was based on the laws of proportion (figures 1 and 2). Peter Roesch proposed a structure without intermediate supports, which he considered as ideal for the design of a non-denominational church. Due to the dimensions being considered for this purpose, he proposed a large space comprised of two longitudinal trusses over perimeter supports, from which the roof was suspended (figure 3).

## Notes

1. “The [Promontory Apartments] building launched Mies on a career that was literally to transform the skyline of Chicago and to inaugurate what the editors of *Architectural Forum* were to call the Second Chicago School of Architecture.” Condit, 1930–1970: *Building, Planning and Urban Technology*, 52–54.

2. Mies van der Rohe in “Second Session: Illinois Institute of Technology,” 14.



Figure 2: East Elevation, Graham Resource Center, Illinois Institute of Technology. (Source: J. C. Brownson, Master's thesis, IIT, 1954.)

The most widely-publicized thesis that Mies and Kornacker tutored was the proposed design by Yujiro Miwa, Henry Kanazawa, and Pao Chi-Chang for a Convention Hall, which was developed in Mies' studio at the same time as one of his own projects (figure 4). Harvey Stubsjeon mentions how a long-span structure is more suitable for the requirements of a community center because it allows for the maximum flexibility with the smallest perimeter, at the same time as lacking any defined directionality. The structural system that was chosen to resolve a span without any interior supports was a square grid. Perspectives were created to study several options, as the final solution is always based on visual considerations (figure 5). Another of the final theses tutored by Mies, in collaboration with Kornacker as a structural consultant, was Peter Carter's project for an Art Museum. In order to resolve the structural system, Carter tested three different structural systems. The first two solutions were ruled out as they had a marked direction, considered as being unsuitable for resolving a square ground plan. The selected option consisted of a grid of bidirectional girders supported on eight perimeter columns. The preliminary requirements proposed by the student were therefore resolved with "a clear structure of well-proportioned elements in which part relates to part, and all parts to the whole" (figure 6).<sup>3</sup>

## 2. The Legacy

Myron Goldsmith brought the concept of 'Structural Architecture' to prominence, continuing Mies' work on the graduate program of the IIT, after he retired in 1959. Goldsmith and David Sharpe worked together with structural engineers in order to continue instilling this idea in students of architecture. It was first Fazlur Khan, and then Mahjoub Elnimeiri, who helped the students to solve structural problems in the same way as Kornacker had previously.

"Chicago is an exceptional city where clear but rational expression of the structural system is expressed to the full advantage and quality of overall architecture. It is this visible expression of technology in architecture that distinguished the Chicago School from all others and it is this particular quality and strength that has made Chicago a unique historical source of contemporary architecture."<sup>4</sup>

3. Carter, "An Art Museum," 13.

4. Khan, "Technology in Architecture—The Chicago School."

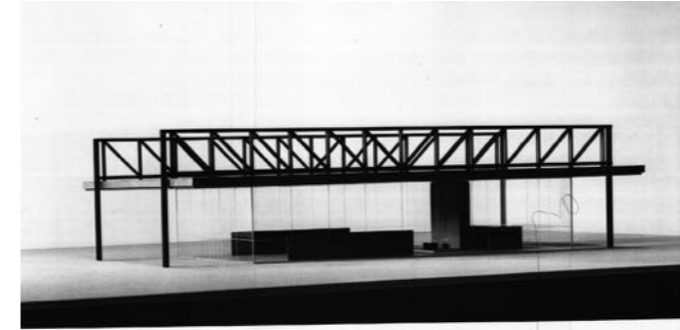


Figure 12. Perspective of proposed solution

Figure 3: Perspective of Proposed Solution, Graham Resource Center, Illinois Institute of Technology. (Source: P. Roesch, Master's thesis, IIT, 1956.)

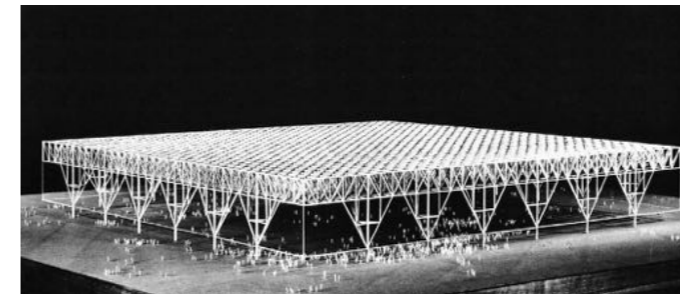


Figure 5: Perspective of Structural System, Graham Resource Center, Illinois Institute of Technology. (Source: J. Miwa, H. Kanazawa, and P. Chi Chang, Master's thesis, IIT, 1954.)

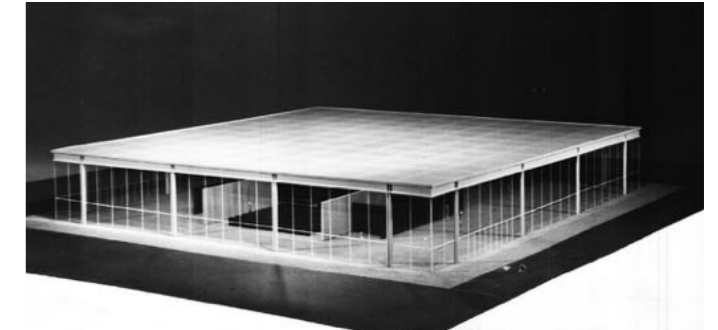


Fig.23. - Photograph - Final Model

Figure 4: Final Model [T S932], University Archives and Special Collections, Paul V. Galvin Library, Illinois Institute of Technology. (Source: H. D. Stubsjeon, Master's thesis, IIT, 1954.)

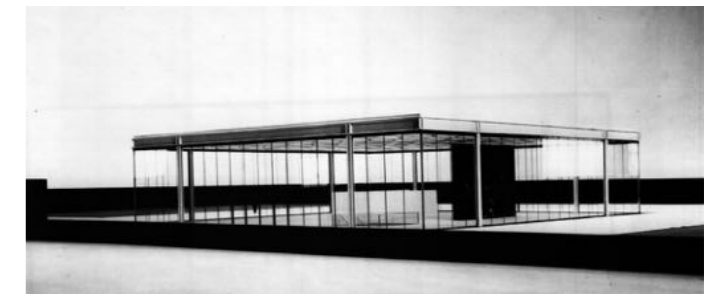


Figure 6: Exterior View of Model, Graham Resource Center, Illinois Institute of Technology. (Source: P. Carter, Master's thesis, IIT, 1958.)

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# THE CASE OF THE PRENTICE WOMEN'S HOSPITAL BUILDING, 1969–1975

The Prentice Women's Hospital building, designed by Chicagoan Bertrand Goldberg, was an interesting case about how to control the presence of centrality using two different methods of composition. On the bottom part of the building, a rectangular five-story glass-box, which shelters the administrative part of the program and medical offices, uses uneven modules in order to create an axis of access. On top, a nine-story concrete quatrefoil tower, which was planned to be the maternity center, uses an axial disposition in order to create a core and to distribute equally the repetitive patient areas. Although aesthetically different, both of the parts base their compositions on principles of centrality (figures 1 and 2).

The volume on the bottom, a rectangular glass-box, had a post-and-beam structure following a regular, equally spaced module. Originally, Goldberg used a composition based on five rectangular modules. Such uneven compartmentalization had created a centralized module, the third of which emphasized the symmetrical composition of the glass-box. Moreover, the third module created an entrance and an axis toward the central core of the quatrefoil tower. Further developments of the design, however, changed this uneven composition to six modules, moving the access of the building to one of its peripheral segments.

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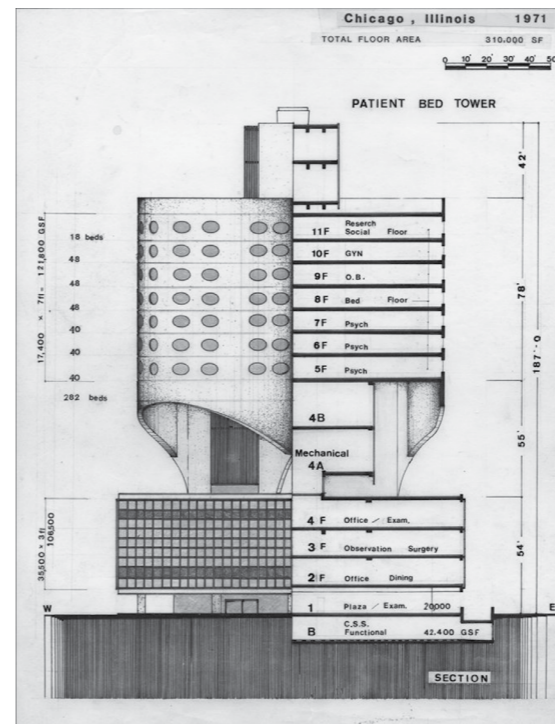


Figure 1: Prentice Women's Hospital Building, Section.  
 (Source: Bertrand Goldberg Archive, Ryerson & Burnham Libraries, the Art Institute of Chicago.)

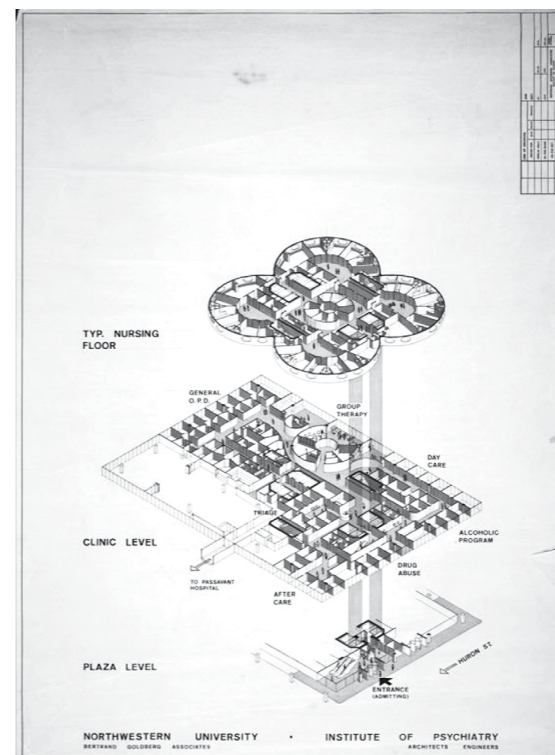


Figure 2: Prentice Women's Hospital Building, Axonometric.  
 (Source: Bertrand Goldberg Archive, Ryerson & Burnham Libraries, the Art Institute of Chicago.)

The elimination of the center has its roots in the avantgarde uprisings of modern masters, which repudiated the concept of symmetrical equilibrium due to the consequent emptiness in the periphery of the composition. The common solution was the use of an abstract grid, which creates spaces of equal value and moves the hierarchy of the program to the margins of the design. In the First Chicago School, for example, Louis H. Sullivan, William Le Baron Jenney, and others manifested, of course, the abstract grid on the steel frame, but also forced moments of centrality using arches on the facades. However, after the Second World War, the symmetrical disposition of a building was considered adequate for most purposes. Considered by the postwar architectural magazines as a distinctly American phenomenon, centrality and the symmetrical composition again became the pretext for a condition of monumentality. In this case, there is the example of Ludwig Mies van der Rohe, considered the main reference of the Second Chicago School, who articulated centrality and the abstract grid through the use of uneven compositional modules.

The volume on the top, a quatrefoil tower, has a concrete shell cantilevered off a central core, which distributes the building's weight through four interlocking arches. Goldberg used an axial composition in order to create four symmetrical lobes. Nursing stations were located in the central core, and patient wards, the repetitive part of the program, were in the four ledges. In this case, the composition had even modules, but the centrality was guaranteed by the structural core. Similar to a pinwheel configuration, each lobe rotates from a centralized point.

In conclusion, the Prentice Women's Hospital is the juxtaposing combination of a rectangular glass box and a quatrefoil tower that have in common the search for centralized moments. When Carl Condit argued that the "New Chicago School" in the 1960s represented "a renewal of the principles of the old school in ways that are appropriate to contemporary urban needs and that reflect the technical progress of the past half century," he understood that one of these renewals was a return to questions of centrality within the steel frame.<sup>1</sup> Unfortunately, the Prentice Women's Hospital was demolished in 2014, but Goldberg's use of uneven modules and axial dispositions toward the centralization of the building remain as a valid contribution to the history of architecture in Chicago.

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## Note

1. Note: I learned from Dan C. Baciu that Condit wrote about the "New Chicago School" in a press article that featured Goldberg's Marina City with a large photograph. Condit, "The Rise of the New Chicago," 34. Mancoff, *Carl W. Condit's Publications—A Chronological Bibliography, 1946–1988*, 258–265.

# CHICAGO 1904: SOCIOLOGICAL DISCOURSES AND THE WORK OF SOCIAL REFORMERS AS VITAL PARTS OF SUBSEQUENT ARCHITECTURAL CONSIDERATIONS

## Abstract

At the beginning of the twentieth century, the enormous social upheavals in Western society caused by the machine age, industrialism, and exploitation by capitalism not only marked the birth of the discipline of sociology, they began concerning protagonists in architecture as well. Within the context of the St. Louis World's Fair and Chicago's Hull House, intellectuals across the disciplines were able to exchange their different proposals for solutions, because they understood this challenge as a Western one in general, regardless of their nationality and cultural background.

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## 1.1 St. Louis World's Fair Congress of Arts and Science

On September 9, 1904, the sociologist and economist Max Weber and his wife Marianne were on a train to Chicago, Illinois, where they were to spend eight days of their three-month trip in America. Weber's work was known to the American public through Albion Woodbury Small, the founder of the Department of Social Sciences and Anthropology at the University of Chicago—also known as the Chicago School of Sociology. Because Small had studied in Germany, it was he who had published several articles by European intellectuals like Weber in the *American Journal of Sociology*, of which he was editor-in-chief.

However, their stay, as well as the resonance of their work, was not limited to Chicago. They also visited the St. Louis World's Fair Congress, a hotspot of cross-Atlantic exchange. Other European invitees to the St. Louis World's Fair Congress were Ferdinand Tönnies, Werner Sombart, and Georg Simmel. The latter declined to attend.<sup>1</sup>

The St. Louis World's Fair Congress of Arts and Science of 1904 was, all in all, an extraordinary intellectual exchange. According to Lawrence A. Scaff, the author of *Max Weber in America* (2011), there were "128 sections assessing the state of knowledge in the human, biological, and physical sciences; medicine; law; the humanities; religion; and education. Some three hundred papers were presented, not including the short papers and commentaries. Weber spoke in a social science panel concerned with rural communities on the afternoon of September 21. At the same time, Ernst Troeltsch delivered his paper discussing William James' 'The Varieties of Religious Experience,' a 'masterpiece' of 'remarkable richness' as he called James' lectures, in a session on the philosophy of religion. That morning, their colleague Ferdinand Tönnies had shared the stage with Lester F. Ward on a sociology panel dealing with social structure, commenting on the development of modern social forms and his theory of community and society, or in his terminology 'Gemeinschaft' and 'Gesellschaft.'"<sup>2</sup>

At the same time, the architectural "forerunners and founders of the Werkbund and the Bauhaus"<sup>3</sup> participated in the "Varied Industries" section of the St. Louis Congress. Due to this, representatives such as Peter Behrens (AEG-Turbine Hall, Berlin-Moabit, 1909), Walter Gropius and Adolf Meyer (Fagus Shoe-Last Factory, Alfeld, 1911), and Joseph Maria Olbrich (Marriage Tower, Darmstadt Artists' Colony, Darmstadt, 1908) were able to show their designs of buildings that were under construction at the time.<sup>4</sup> Olbrich and Behrens, in particular, had quite an amount of exhibition space to do so, "the former with a complement of six rooms bordering a courtyard and the latter with a spectacular reading room."<sup>5</sup>

Marianne Weber was greatly impressed by these architectural exhibits: "At the Exposition there are more attractive things to see than I expected. But by far the most beautiful are the rooms and arts and crafts objects presented by the German artists. [...] The forms are appropriately functional and simple, without any embossed ornamentation, thus easy to keep clean. [...] The artistic purpose also consists of adapting the furniture to a specific space and designing windows in each room with an individual form and color."<sup>6</sup>

Another guest among the World's Fair visitors who shared Marianne Weber's enthusiasm was none other than the Chicago architect Frank Lloyd Wright. According to Anthony Alofsin, one of Wright's biographers, Wright commended his visit and encouraged colleagues at his studio in Oak Park, Illinois, to see the exhibition because it was "a liberal experience."<sup>7</sup> Whether these European architects and their modern designs can be associated with his expression "liberal experience" is difficult to conclude. But it is likely that Wright was far more aware of their work, if not influenced by it, than he had ever admitted.<sup>8</sup>

## Notes

1. Lawrence A. Scaff, *Max Weber in America* (Princeton: Princeton University Press, 2011), 15.

2. Scaff, *Max Weber in America*, 54.

3. Scaff, *Max Weber in America*, 68.

4. Scaff, *Max Weber in America*, 68. Also: Anthony Alofsin, *Frank Lloyd Wright—The Lost Years, 1910–1922: A Study of Influence* (Chicago: University of Chicago Press, 1993), 13.

5. Scaff, *Max Weber in America*, 69.

6. Marianne Weber, *Max Weber Papers*, September 27, Geheimes Staatsarchiv Preußischer Kulturbesitz, in Scaff, *Max Weber in America*, 68.

7. Alofsin, *Frank Lloyd Wright*, 13.

8. Alofsin, *Frank Lloyd Wright*, 11.

## 1.2 Chicago—The “Ur-Metropolis”<sup>9</sup>

When the Webers and Ferdinand Tönnies visited Chicago, their intention was to study these enormous challenges directly on the basis of the so-called “ur-metropolis,”<sup>10</sup> which had become the epitome of industrialization and modernity, and could consequently be considered as a precedent for cities like Berlin.<sup>11</sup> One place they both visited were the Chicago Stockyards, which were vividly described by Baedeker’s<sup>12</sup> travel guide at the time. The stockyards and their assembly-line mechanization, with line-speed efficiency of killing animals and processing meat, were the hotspot of Chicago’s first unionized strike. Max Weber described the place as follows: “Everywhere one is struck by the tremendous intensity of work—most of all in the ‘stockyards’ with their ‘ocean of blood,’ where several thousand cattle and pigs are slaughtered every day. From the moment when the unsuspecting bovine enters the slaughtering area, it is hit by a hammer and collapses, whereupon it is immediately gripped by an iron clam, is hoisted up, and starts on its journey, it is in constant motion—past ever-new workers who eviscerate and skin it, etc., but are always (in the rhythm of work) tied to the machine that pulls the animal past them.”<sup>13</sup> Days after their arrival, the Webers witnessed part of the “twentieth century’s first major strike by butchers, packinghouse workers, teamsters, and affiliated trades in the stockyards.”<sup>14</sup> The Webers themselves reported “an unsuccessful strike, masses of Italians and Negroes as strikebreakers; daily shootings with dozens of dead on both sides [...].”<sup>15</sup>

At the same time, Ferdinand Tönnies, another visitor to Chicago who was also on his way to the St. Louis Congress, described Chicago as a “giant city” and as the “most typical American metropolis; one could say, the most typical modern city. And yet it is the metropolis of agriculture, i.e. of trade and industries that directly follow or serve agriculture. [...] There are the Union Stockyard’s immense export slaughterhouses with the mass and machine slaughter of animals; we read in Baedeker’s that the annual output amounts to 3–4 million head of cattle, 7–8 million pigs, 3–4 million sheep and 100,000 horses, with a total of 300 million dollars, and that the packing companies employ about 25,000 workers.”<sup>16</sup> On the general situation, Tönnies reported a certain “uneasiness” toward the “ever more powerful commercialism and industrialism” in the country, and he saw “tremendous evil and danger” in the monopoly of the trusts.<sup>17</sup> In American society, such developments had increasingly led to “serious concerns, unwillingness and resistance, stimulating theoretical and critical debates that call the entire social system into question. The success of the current President of the Republic, in his re-election, would not have been as great as it was if Mr. Roosevelt’s [Theodore Roosevelt, Jr.] personal reputation had not been complemented by the popular opinion that he would fight the trusts, even though he belongs to the predominantly industrialist Republican Party and was its candidate.”<sup>18</sup>

## 2.1 “Gemeinschaft” and “Gesellschaft”

The sociologist and philosopher Ferdinand Tönnies published his magnum opus *Gemeinschaft und Gesellschaft*<sup>19</sup> [*Community and Society*] in 1887. Not only was it the first German work on sociology, but it was also well-known within the discipline by 1904. In it, Tönnies categorized two dichotomous, theoretical “collective entities.”<sup>20</sup> He proposed two concepts for how a human being affirms him- or herself socially within a group, and how individuals are mutually dependent or connected among themselves: If the individual affirms him- or herself as part of the social entity, then he or she will align his or her actions with this higher entity—this is the concept of “Gemeinschaft.” Individuals living in a “Gesellschaft” want to live next to one another peacefully—like those in a “Gemeinschaft”; however, they do not want to be substantially connected, but rather substantially separated from each other. Hence, actions within a “Gesellschaft” do not take place with regard to an entity or a common good.

Tönnies describes the family, the village, the church, or a cooperative (“Genossenschaft”) as typical examples of a “Gemeinschaft,” whereas a city, a state, or a partnership agreement (“Gesellschaftsvertrag”) are typical examples of a “Gesellschaft.” Tönnies discussed this concept at the St. Louis Congress in 1904, and a year later, his lecture “The Present Problems of Social Structure” was published by Small in the *American Journal of Sociology*.<sup>21</sup> The lecture’s title says it all: Tönnies postulated that “out of such a system will be gained a better and more profound insight into evolution of society at large, and into its historical phases, as the life of these collective entities.”<sup>22</sup>

Accordingly, Max Weber also worked with Tönnies’ terminology. He developed it further (to “Vergemeinschaft” and “Vergesellschaftung”) in his principal work *Wirtschaft und Gesellschaft* [*Economy and Society*], which itself became another fundamental publication for the discipline.

## 2.2 Hull House—Social Reformers’ Work, an Applied Answer

Next to the Department of Sociology at the University of Chicago, Hull House, located at 800 South Halsted Street and in the immediate vicinity of Little Italy, was another crucial institution within the Chicago School of Sociology. It became Chicago’s first social settlement and was headed by social reformer and pragmatist Jane Laura Addams and her comrade-in-arms Ellen Gates Starr. Addams played a pivotal role within the sociological discourse in Chicago; her efforts in social work and her writings were well-known. The latter were recommended basic readings in Small’s Department of Sociology.<sup>23</sup> Addams and other residents of Hull House regularly held courses in the department, and visitors to the department were sent to Hull House to see it firsthand for themselves. Living in slum-like neighborhoods, amidst immigrant workers, Addams, Starr, and other founders of such social settlements tried to reform child labor laws, industrial working conditions, and women’s rights for the better. Furthermore, Hull House not only accommodated a kindergarten, a day nursery, and an infancy care center, but was also provided education to the workers. “One of the essential ingredients of this education was training in the crafts [...]. Classes and exhibitions in cabinet-making, bookmaking, weaving, and pottery were set up.”<sup>24</sup>

Their work and Hull House as a platform for exchange became fundamentally crucial not only for the still young discipline of sociology but for architects as well: Frank Lloyd Wright, for instance, was closely connected with Hull House through his Prairie School project. Hence, it comes with no big surprise that Wright held a lecture at Hull House in 1901. It was entitled “The Art and Craft of the Machine” and was promoting that “mass production was necessary if good design was to be democratically enjoyed.”<sup>25</sup>

Finally, it can be emphasized that the protagonists of disciplines mentioned here were united by their commitment to grasp “the evolution of society at large” in their daily thinking and practice.

Note: The second part of this article “Chicago 1904—First architectural attempts to seek solutions to socio-cultural fault lines caused by Western industrialization and capitalism” was pre-published at the repository of the Academy of Fine Arts Vienna, 2019. (<https://doi.org/10.21937/23648>)

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9. The term derives from Alexander Eisenschmidt, “No Failure Too Great,” in *Chicagoisms—The City as Catalyst for Architectural Speculation*, ed. Alexander Eisenschmidt and Jonathan Mekinda (Zurich: Park Books, 2013), 151.

10. Note: With this in mind, it probably comes as no great surprise that Chicago and Berlin became two of the early centers of (urban) sociology.

11. Eisenschmidt, “No Failure Too Great,” 151, 156.

12. Note: Karl Baedeker was a German publisher who set the standard for authoritative guidebooks for tourists.

13. Marianne Weber, *Max Weber—A Biography*, trans. Harry Zohn (New York et al.: Wiley & Sons, 1975), 287.

14. Scaff, *Max Weber in America*, 40.

15. Weber, *Max Weber*, 286.

16. Ferdinand Tönnies, “Die nordamerikanische Nation,” in *Deutschland—Monatsschrift für die gesamte Kultur*, 4, no. 1, ed. Paul Graf von Hoensbroech (Berlin: Schwetschke, 1905), 576. Translated by Waltraud P. Indrist.

17. Tönnies, “Die nordamerikanische Nation,” 573.

18. Tönnies, “Die nordamerikanische Nation,” 573.

19. Ferdinand Tönnies, *Gemeinschaft und Gesellschaft—Grundbegriffe der reinen Soziologie*, 1887 (Darmstadt: Wissenschaftliche Buchgesellschaft, 2010).

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22. Tönnies [sic], “The Present Problems of Social Structure,” 570.

23. Cathy Eberhart, *Jane Addams (1860–1935)—Sozialarbeit, Sozialpädagogik und Reformpolitik*, 1995 (Bremen: Europäischer Hochschul-Verlag, 2009), 81.

24. Alan Colquhoun, *Modern Architecture*, (Oxford: Oxford University Press, 2002), 50.

25. Alan Colquhoun, *Modern Architecture*, (Oxford: Oxford University Press, 2002), 53.



# SUBVERTED HISTORICAL NARRATIVES BEHIND THE CREATION OF CHICAGO HOUSE MUSEUMS

## Abstract

The creation of the institution of the house museum in America has been tailored by many authors, reformed by politicians, and codified by a variety of establishments. This dissertation examined six homes in Chicago that, at various points in time, were accessible to the public, offering exhibits and programming to illuminate about the epitome in residential living, which was made possible through capitalist models of wealth generation and centralization. Domestic architecture hence functioned as a prime totem for supreme capitalist accomplishment. Architectural expression was quick to follow suit, conveying its arrival in the upper echelons of society, exclusionary belonging, and celebration of dynastic achievement.

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## Introduction

Of the six homes, four still stand today and are largely accessible to the general public. Educational outreach programs vary, as do the focus of each inhabiting institution. The methodology employed to seek a better understanding of these homes, and what led to their success or failure (demolition) rested upon primary-source interviews with living persons involved in the attempts to save or rescue these homes in their greatest hour of need, when their general popularity was in nadir. The question posed from the outset of this investigation centered around asking if there were any unifying characteristics, trends, patterns, or people that contributed to the success of the founding and sustainment of the model of the house museum in Chicago. The answer to this initial question, as the research progressed, diverged, and eventually yielded new history for each home and neighborhood, was told by the surviving activists living today.

A summary of new findings and new histories has been condensed in this paper, revealing previously unrecorded narratives about each of the buildings and the people involved in ensuring their survival. Obscure political motivations, institutional jealousies, and financial swaps pervade these new narratives, which have largely not entered into the public domain and certainly not into institutional “official history.” Alternative new histories, verified through separate participant parties, shed light on the difficult task historians are charged with: the notion that one must condense complex narratives for easy public consumption, whether in the classroom or on a wall placard within the house museum. Capturing vignettes of very complex relations have never been easy or clearly compressible.



Figure 1: Palmer Castle postcard, post-1915.  
(Source: Author's collection.)

## 1. The Palmer Castle

A free-market capitalist narrative accompanies the destructive fate of what was once Chicago's ne plus ultra Gilded Age residential estate. The shift in values, political processes, and societal events which led to the demolition of the Potter and Bertha Honoré Palmer home provides multiple insights into how the creation, sustainment, and promotion of a house museum becomes a near impossibility when the founding family's premiere art collection is purposefully removed from its initial residential habitation. In the absence of art, the Palmer castle became architecture's sans raison d'être. This, however, was not the sole factor contributing to the decline and disassembly of the home, which on a few rare occasions, was open to the public as a house museum.

One federal legislative act predicated the decoupling of the art collection from the family's mansion: the 1916 Federal Inheritance Tax law provided immediate financial motivation to the Palmers. In order to avoid a hefty levy upon the adult Palmer children, who were the eventual inheritors of the estate, supplementary high-value assets such as art, were shed. A second contributing monetary motivator was a neighborhood zoning district change which made a significant increase in the maximum allowable buildable height upon the land fronting Lake Michigan. Perhaps surprisingly, this local urban land-use change was the direct result of influence by the Palmer sons, one of whom had been an alderman earlier in his career. His sons wasted no time utilizing similar methods in exploring various opportunities to redevelop the prime land upon which their parent's estate was located. While the castle largely sat empty and unused after the death of Bertha in 1918 (figure 1), over the course of an entire generation, multiple high-density redevelopment plan proposals were publicized, lingered, and went unexecuted. Research indicates free-market real estate development currents provided the energy and capital necessary to formulate proposals—as well as conversely pulling capital away from potential redevelopment projects, leaving the estate empty, closed, and with very little public engagement.



Figure 2: George F. Harding museum photograph, circa 1960.  
(Source: Glessner House Museum archives.)

## 2. The George F. Harding, Jr. Home

The Harding home demolition demonstrates an unfortunate phenomenon in the urban setting of Chicago: the scourge of under-represented and voiceless groups succumbing to projects promoting larger corporate financial and political gain. The original Harding museum was a well-established, publicly accessible, private collection that over a decade on Chicago's South Side became a steady cultural, educational, and architectural institution that citizens embraced (figure 2). Collected archival evidence reveals the Harding museum's arms and armor captivated the hearts and minds of visiting guests and community patrons for over two decades after the death of the founder. However the institution still lacked the political power to remain an autonomous museum within a unique architectural enclosure when the estate was deemed to be in the way of urban renewal projects. The city was easily able to condemn the museum buildings and adjacent areas of former privately owned residential land to facilitate the construction of both federally subsidized road projects and out-of-state financed high-rises, which were promoted as socially and architecturally

progressive. The collection, however, miraculously persists to this day, due to the efforts of a few dedicated professionals, fascinatingly outside the traditional realm of art and architectural preservationists.

The case study of the demolished Harding home gave five insights about the notion of the house museum in Chicago: First, the nature of the collection—if seen as fashionable and part of what the art establishment has decided qualifies as acceptable art within the canon, the collection assists in preservation. Second, the market value of the collection of art and antiquities does not guarantee ease in saving the building. Third, strange design or styling, coupled with the lack of significant architectural pedigree, does not aid or guarantee preservation of the building. Fourth, previous urban planning methods in the 1960s did not allocate sufficient professional expertise, time, or financial resources to evaluate fully the significance of a community's architectural resources. Lastly, federal funds and federal loan subsidies for high-density housing projects oftentimes preempted local community objectives for medium- or low-density redevelopment. Opportunities for federal funds for high-speed automobile transit projects and new mass-housing projects reigned supreme above most other local neighborhood improvement initiatives.



Figure 3: Henry B. and Caroline P. Clarke house, contemporary view. (Source: Photo by the author.)

### 3. The Widow Clarke House

The locally famous Widow Clarke home provides several insights into how a village banker's fairly pedestrian residence, typical of an upper-middle class Midwest pioneer residential settlement, can be catapulted into the rarefied realm of a celebrated house museum, almost solely through the virtue of its age. The Clarke house ended up being nearly the solitary survivor through the ages, becoming a contemporary conduit for the teaching of municipal history. Before this didactic end use, multiple owners pursued a myriad of creative salvation and reuse options—some being far from the idiom of a traditional house museum, such as a house of worship. Many attempts at reuse occurred during the 1940s, preceding the building preservation movement in America which developed in the 1960s. Several decades later in the 1980s, the concept of full public access and complete building restoration (to a specific point in time) ultimately came to fruition upon the agreement by historians who declared absolute establishment of the home's civic alpha status. Architectural fabric was thus found to provide necessary credence to proclaim past ephemeral history once again tangible, augmenting the declaration of a municipal

authoritarian power. Savvy politicians eventually discovered the house provided patriotic providence for the celebration of the birth and establishment of their Midwestern American metropolis, as well as helped their reelection efforts in Chicago (figure 3).



Figure 4: John J. Glessner house, contemporary view. (Source: Photo by author.)

### 4. The Glessner House

The Glessner house provides a successful final preservation narrative after proceeding through much historical difficulty in achieving these goals (figure 4). The home's early history, following the death of its original owner John Jacob Glessner, is fraught with several impediments which limited the implementation of the owner's will. The history of the Glessner home's difficult decades (1936–1966) illustrates multiple stories of unfruitful gifts, alliances, partnerships, leases, and sales—which did not yield the desired results of a creative, community-engaging institution, promoting the civic appreciation of architecture, as wished by the founding patron. The complete absence of a firm financial footing (as in the case of no initial supporting endowment) did not aid in the quick transformation of the home into a bona fide house museum. In fact, the Glessner family history is illustrative of a case where a descendant (a solitary surviving daughter) had little interest in architectural initiatives and instead pursued philanthropic donations in alignment with her own intellectual endeavors. Through the exploration of primary-source documents and interviews with members of the preservation community, a more dynamic story has emerged revealing how social hierarchies within the nascent preservation community influenced the fruitful results Glessner house preservationists wished to obtain.



Figure 5: Albert and Elsa Madlener house, contemporary view. (Source: Image by the author.)

### 5. The Madlener House

The Madlener house yielded a prime case study concerning the positive influence of a duality of neighborhood preservation forces present in the early 1960s in Chicago's Gold Coast neighborhood (figure 5). First, a nascent movement identifying historic architecture, coupled with a residential conservation and social movement, battled what was identified as "the enemy," which was pinpointed as dwelling in city hall. This antagonist existed in many forms, all serving the same purpose: to find methods to fill city coffers. The controlling politics of Mayor Daley's machine promoted the maximum development of property tax-generating real estate in select neighborhoods of Chicago. This counterbalanced revenue loss from an aging housing stock in other areas of the city, which were reclassified as slums and urban decay. The goal of enabling development was in opposition to the established genteel senior neighborhood residents of the Gold Coast who, at the time, sadly had minimal political clout.



Figure 6: Frederick and Lora Robie house, contemporary view. (Source: Photo by the author.)

### 6. The Robie House

Frank Lloyd Wright's Robie House demonstrates the alluring power and seductive abilities federal government funding has in framing urban redevelopment schemes as a panacea for local neighborhoods (figure 6). Neighborhood residents were determined to be destitute and resource-starved at a time when threats to a stable community were thought to lurk within every transient neighbor who possessed dissimilar faith or skin tone than the preexisting status quo. These demographic shifts were thought to bring further erosive danger and societal risk to long-established residential neighborhoods.

An easy solution was proposed by a long-standing institution adjacent to and enveloping the Robie house: the University of Chicago. The private educational behemoth's master plan and participation in the creation of urban renewal objectives was formulated with a broad goal of omniscient neighborhood control. Both distinctive and quotidian architectural fabric had zero merit and no value in the criterion matrix assessing the existing aging housing stock in Hyde Park. New construction was the ultimate elixir that most assumed would be a universal panacea. How the Robie house escaped near-total obliteration from reality in situ and was almost relegated to exist only in photos in history books, *twice*, proves to be a complex tale to tell. An array of celebrity architectural players (including Philip Johnson, and Ben and Harry Weese) eventually comes to the rescue. Together, their contributions illustrate a more broad and inclusive history of preservation, well beyond existing monotone narratives which dwelled in a traditional trifecta of the house, the architect, and the style. The Robie house preservation story demonstrates how committed and vigilant participants—ranging from seminary presidents to neighborhood photographers to established academics—exerted exceptional forces for good within their own respective spheres of influence (figure 7).

In conclusion, this study focused upon unearthing new narratives as told by those who participated in forming groups which enabled the rescue and saving of homes for local community reuse, fraternal architectural organizations, the exhibition of art, and the education of school children about civic pride. May the model of the house museum in Chicago long endure, and be retold to many.



Figure 7: Letters pleading to save and reuse the Robie house. (Source: University of Chicago archives; photo by the author.)

# WHAT THE AUTHOR OF JUNKSPACE TOLD MIES IN THE JUNGLE

## Abstract

There are a series of parallels between Ludwig Mies van de Rohe in the post-World War II era and Rem Koolhaas after the Cold War. One is that both dismiss the city as lost. “The city is no longer,” Koolhaas concludes in his essay “Generic City” from 1994,<sup>1</sup> while Mies asserted in 1955 that: “There are no cities, in fact, anymore. It goes on like a forest. That is the reason why we cannot have the old cities any more [*sic*]; that is gone forever, planned city and so on. We should think about the means that we have to live in a jungle, and maybe we do well by that.”<sup>2</sup> At the time, Mies thought he had found a way to come to terms with the jungle. The idea was a uniform, culture-wide type of architectural production that would match its epoch: “What I am driving at is to develop a common language. ... We have no real common language. If we can do that, then we can build what we like and everything is all right.”<sup>3</sup>

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## Notes

1. Koolhaas, “The Generic City,” 1264.

2. Quoted in: Detlef Mertins, “Living in a Jungle: Mies, Organic Architecture, and the Art of City Building,” 618.

3. Quoted in: Mertins, “Living in a Jungle,” 633.

4. In Michael Blackwood’s documentary *Mies* from 1986, Arthur Drexler remembers: “Several years before his death, I had a conversation with ... Mies. And he began to talk about the condition of architecture as he saw it, not just in the United States but around the world. And he was quite depressed by it. ... If I may paraphrase him, he said that ‘We showed them what to do. What the hell went wrong?’ ... As far as

he was concerned, about everything had gone wrong. He thought that he had solved every kind of problem that architecture could possibly have to deal with. And he could not understand why people weren’t satisfied to accept his solutions to that, and just continue to carry out his ideas.” See also: Detlef Mertins, *Mies*, 440-441.

5. In a “manuscript of an important address Mies gave here [in Chicago] in German,” Mies stated: “Formen zu erfinden, ist offenbar nicht die Aufgabe der Baukunst.” [“Inventing forms is evidently not the task of architecture.”]. In Fritz Neumeyer, *Mies van der Rohe*, 388. In 1950, Mies noted: “Nicht das Interessante und Einmalige, sondern das Selbstverständliche und Gültige ist das eigentliche

What Mies had in mind is usually referred to as the new Chicago school, or the architecture marked by his own teachings and the example of his practice in the United States. Toward the end of his life, Mies confessed to Arthur Drexler that he considered his efforts a failure.<sup>4</sup> But apparently he was not referring to his own work, nor to that of the architects following his example, but rather to those concerned with formal invention, “the interesting and singular,” “the spectacular.”<sup>5</sup> Koolhaas, to whom these descriptions would largely apply, saw Mies’s ideas disproved.<sup>6</sup> The latter’s American work—which, in Koolhaas’s terms, sought to be “generic”—had become “invisible,” could not compete with “the interesting,” “the signature.”<sup>7</sup> Koolhaas reasons that Mies’s alchemical “fusion of the sublime and the generic into a new hybrid ... could not be duplicated by others.”<sup>8</sup> The accent should be on “new.” Koolhaas is decidedly and visibly interested in formal invention. Against that background, architecture schools based on rules extracted from an exemplary body of work—such as Mies’s—are problematic. For in as much as the model is being “reproduced,” there is no invention.

## The Encounter

Koolhaas has repeatedly professed a long-standing fascination with Mies, traces of which have permeated the Office for Metropolitan Architecture’s (O.M.A.) work since the 1980s. The Campus Center in Chicago (1997–2003)—located on the Illinois Institute of Technology campus—was master-planned and built largely by Mies himself—proved an occasion for Koolhaas to articulate a reply architecturally. His scheme embraces Mies’s Commons building on two sides, as if engaging in a private conversation. The guiding theme of the O.M.A. project is “him.” Mies’s large portraits aside, the building takes up the “grammar” of the campus. Faithful to its modular spirit, the Center adopts a 24x32-foot grid and steel frame construction of the Commons, which is most evident in its use of black, freestanding I-beam columns.<sup>9</sup> Like Mies’s clear-span buildings, the interior is sandwiched between two horizontal planes with a perimeter wall of glass.

Yet, it is thus all the more precisely that Koolhaas pronounces his objections to Miesian “lessons.” O.M.A.’s design distorts the language it starts from. The zigzag of its western façade defies the simple box (figure 1). The topography of the floor is varied; the roof partly sloped, as if squeezed by the weight of the “L” (the elevated train line) and the tube housing its rails. The diagonal corridors linking the campus west of State Street to the residential quarters to the east almost outdo the orthogonal order they cut into (figure 2). Koolhaas opposes Mies’s neutral space, conceived for flexible use, with his determinate own. The floor and the partitions react strongly to the program—the molded ground, the multiple materials and colors displaying the diversity of specified uses (figure 3). Only the uniform sheetrock ceiling recalls the “neutral” interior; the green panels and spackled joints left without finish, the craftless details all exposed. (figure 4).<sup>10</sup> It is as if Koolhaas were saying to Mies that his

baukünstlerische Thema.” [“Not that which is interesting and unique, but that which is self-evident and valid is architecture’s actual theme.”] In Neumeyer, *Mies*, 393. In 1953, Mies stated: “Too often we think of architecture in terms of the spectacular.” In “A Chapel—Illinois Institute of Technology,” *Arts and Architecture*, 18–19. Quoted in Neumeyer, *Mies*, 393.

6. “The Generic City proves him wrong: its more daring architects have taken up the challenge Mies abandoned, to the point where it is now hard to find a box.” Koolhaas and Mau, “Generic City,” 1260.

7. Koolhaas, “Miestakes,” in Lambert, *Mies in America*, 718–719.

architectural approach, based on an intellectual immersion in the spirit of the material, does not make sense if the materials are not steel or brick, but sheetrock or insulation meant to be clad with whatever will protect its amorphous substance. The Campus Center is no “school.” There is no discernible formula leading to a predictable result, no “language” calling for dissemination; rather, the design appears like a labyrinth, willfully built for “followers” to get lost in.



Figure 1: O.M.A./Koolhaas. Campus Center, IIT Chicago. Model. (Photo courtesy of Anne Filson.)



Figure 2: O.M.A./Koolhaas. Campus Center, IIT Chicago. Model, detail of the interior. (Photo courtesy of Anne Filson.)

8. Koolhaas, “Miestakes,” in Lambert, *Mies in America*, 734.

9. An explanatory drawing by O.M.A. explains: “Exposed I-shaped Miesian columns follow Mies’ Campus-wide planning grid.” In *El Croquis* 131/132 (2006): 346. The reason for deviating from Mies’s H-beam columns and using I-beam columns instead is not commented on. The

grid used in the Commons is mentioned by Cohen, *Ludwig Mies van der Rohe*, 118. It differs from the 24x24-foot grid generally used for the rest of the campus.

10. In the presentation for O.M.A.’s competition entry, Koolhaas explains that the roof was conceived in metaphorical analogy to a violin. It was to be covered with wood, also underneath. The idea had to later

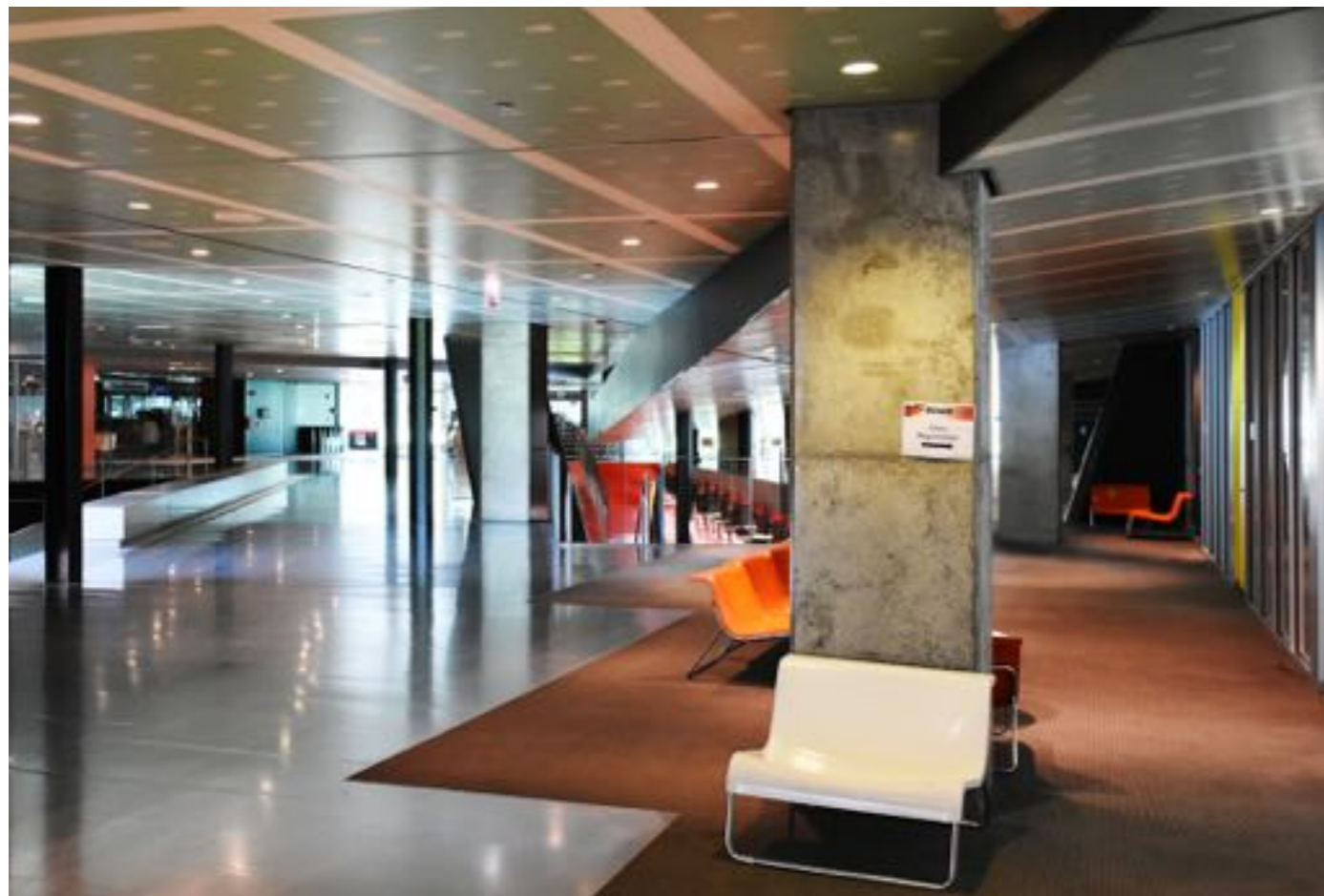


Figure 3: O.M.A./Rem Koolhaas. Campus Center, IIT Chicago. Computer stations and lounge. (Source: Photo by the author.)

Crown Hall is some two hundred yards down the street. Its symmetry implies hierarchy and a center—although as Colin Rowe has shown, the homogeneity of the underlying grid, along with the partitions in the middle of the building, undermines the notion of spatial centrality.<sup>11</sup> Nonetheless, the theme of the center is voiced, bespeaking the idea of a whole, just as the overall impact of regularity suggests an all-encompassing order, asserting unity. The tension between the neutral and the centered space evokes the double nature of the grid as described by Rosalind Krauss: the grid as bridge from materialism to the spiritual.<sup>12</sup> It corresponds to Mies's commitment to the "facts" of material and technology, aimed at giving architecture a spiritual dimension.<sup>13</sup> The Campus Center avoids symmetry. It is no oasis of order. There is no structure in terms of construction

or geometry that would unify all parts of the design. The roof, as the strongest agent of unity, struggles—sliced, creased, in places eclipsed.<sup>14</sup> The truth of this architecture is not a shining example of transcendental perfection, but a modern, enlightened truth about the mess we live in. In his essay "Junkspace"—like this project emanating from the late 1990s—Koolhaas claims as the recent condition of architecture a fundamental loss of control.<sup>15</sup> The Campus Center deals with that. It is as if Koolhaas were saying, "Architecture, too, has turned into a jungle."

be abandoned: "Fire codes would have necessitated hanging the finish below a sheetrock layer, and Koolhaas found this a ridiculous waste of both money and building logic." In Aaron Betsky, "The Architecture of Value Engineering," 65.

11. In "Mies van der Rohe's Paradoxical Symmetries," Robin Evans distinguishes between the non-hierarchical bilateral

symmetry of duplicated halves and monumental symmetry, halfway between which a "third term" is added. The plan of Crown Hall obviously belongs to the latter category. In Evans, *Translation of Drawing to Building and Other Essays*, 270–271.

12. Krauss, "Raster," 51–66.

13. Fritz Neumeyer, in his essay "A World in Itself: Architecture and Technology," describes "the idealistic construction of a philosophy of opposites" as the "essence of Mies's architecture": "Modern technology could also help in building a bridge on which the spirit could enter into a world of otherwise meaningless facts and resolve the limited being into a higher, metaphysical reality—one in which the opposing

elements of mind and matter coincide as self-completing parts of a whole." In Detlef Mertins, ed., *The Presence of Mies*, 81.



Figure 4: O.M.A./Rem Koolhaas. Campus Center, IIT Chicago. West façade. (Source: Photo by the author.)

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14. The character of the exterior differs significantly from that of other O.M.A. projects from those years. The monolithic façades of projects like the Rotterdam towers (1997–2013) conform to the claim in "Bigness" that "interior and exterior become separate projects, one dealing with instability of programmatic needs, the other ... offering the city the apparent stability of an object." In Koolhaas and

Mau, *S,M,L,XL*, 501. All the more, the forcefully composite exterior of the Campus Center seems to oppose Mies's idea of the "common language."

15. Koolhaas's essay "Junkspace" goes back to the lecture "Learning from the Mall of America," given in Minneapolis in 1997—the year of the Campus Center competition. As an essay, "Junkspace" was

published in *a+u* in 2000, followed by an extended version in the *Harvard Guide to Shopping* from 2001; it was also included in the catalogue of the exhibition *Content* from 2003, the year the Campus Center opened.

# PART II PHD PROGRAM OVERVIEW 2017–18

Institute of Gas Technology Building  
(PhD studios and conference room).  
Photo courtesy of University Archives and  
Special Collections, Paul V. Galvin Library,  
Illinois Institute of Technology.



# PHD PROGRAM OVERVIEW 2017–18

## A Year in Perspective

The 2017–18 academic year was enhanced by the progression of our two main academic programs: the PhD Architecture Research Forum and the annual Graduate Symposium. We organized the third lecture series of our annual Research Forum for the Fall and Spring semesters, which brought more than twenty local and international guest speakers to our community. Faculty, architectural historians, librarians, professionals, lawyers, visiting PhD students, and many others collaborated on the growth of our research and network. The second of our main activities, the International Graduate Student Symposium, titled *Chicago Schools: Authors, Audiences, and History*, was an important step for starting a tradition in our student-run activities. This was the second consecutive year that our PhD Program organized a peer-reviewed symposium, which once again reached territories beyond the United States. Beyond empowering students, the symposium encouraged proactive behaviors, a valuable skill in both academic and professional careers.

### Curator

Marcos Petrolí, PhD Candidate  
and Administrative Assistant  
*Illinois Institute of Technology*

In addition to the continuance of the PhD Architecture Research Forum and the Graduate Symposium, we started to discuss the idea of organizing our own PhD Journal, *Prometheus*, a platform that could serve as a voice for our community. *Prometheus* could publish the production of our PhD symposia and serve as a record of our history at IIT. We realized that we had enough material to document our student life, accomplishments, and activities, and could add to our community through publication. With *Prometheus*, we could see our progress in a collective way.

During this past year, we visited the historical 1892 Charnley-Persky House in Chicago; the exhibit of architecture, art, and engineering by Skidmore, Owings & Merrill; and cultural events at the Alphawood Foundation. All of these events exemplified the variety of cultural activities circulating around our PhD Program. In the same manner, as a group of PhD students, we published and presented peer-reviewed papers in renowned conferences, seminars, and workshops locally and internationally. Such achievements would not have been possible without the generous contributions of faculty and professionals who worked with us. After all, our hard work and goodwill toward progress is the real metaphor behind the legend of *Prometheus*.

# ACADEMIC PROGRAMMING

## Architecture Research Forum

Our PhD program's weekly PhD Research Forum lecture series is meant to provide PhD students and faculty with opportunities to learn from and interact with researchers from a host of different backgrounds, and local, national, and international institutions. Here, we provide a list of guest speakers who visited us during the Fall 2017 and the Spring 2018 semesters. All lectures are held at 3410 S. State, a Ludwig Mies van der Rohe-designed building completed in 1952; it was originally known as the Gas Technology Building.

### FALL 2017

**1 — August 28 "Performance and Sustainability in the Built Environment"**  
Rahman Azari, Assistant Professor  
*College of Architecture, Illinois Institute of Technology*

**2 — September 11 "Digging Canals, Building Civilizations: Architecture and Development Between Mars and Earth"**  
Alla Vronskaya, Assistant Professor  
*College of Architecture, Illinois Institute of Technology*

**3 — September 25 "Potentialities of Group Research"**  
Kim Soss, Architecture Librarian, Head of the Graham Resource Center  
*Illinois Institute of Technology*

**4 — October 03 "Tools for Preservation: The Case of Anthony Overton School"**  
Paola Aguirre Serrano, Founder  
*Borderless Studio*

**5 — October 30 "Sustainable Energy Supplies"**  
Brent Stephens, Associate Professor  
*Armour College of Engineering, Illinois Institute of Technology*

**6 — November 6 "Design Patents"**  
Catherine Vorwald, Associate Vice Provost  
*Technology Development, Illinois Institute of Technology;*  
Nicole Bashor, Partner and Patent Attorney  
*J.D. Quarles & Brady LLP*

**7 — November 13 "Palais Garnier: Toward an Architecture of Dance and Music in XIX Century France"**  
Cynthia Vranas, Director, Mies van der Rohe Society  
*College of Architecture External Affairs, Illinois Institute of Technology*

**8 — November 20 "Information Technologies for Communication in Construction"**  
Ivan Mutis, Assistant Professor  
*Armour College of Engineering, Illinois Institute of Technology*

**9 — November 27 "Sustainability: Future Priorities for the Design Industry"**  
Chris Drew, Director of Sustainability  
*Adrian Smith + Gordon Gill Architecture*

### SPRING 2018

**10 — January 18 "Landscape and Theatrical Stages: Research on Application of the Space Construction from Theatrical Stage to Contemporary Landscape Spatial Design"**  
Simin Bian, PhD Candidate  
*School of Architecture, Tsinghua University*

**11 — January 25 "The Black Skyscraper: Architecture and the Perception of Race"**  
Adrienne Brown, Associate Professor, Director of Undergraduate Studies  
*Department of English Language and Literature, The University of Chicago*

**12 — February 08 "Chicago / Film / Frame"**  
Jonathan Miller, Studio Associate Professor  
*College of Architecture, Illinois Institute of Technology*

**13 — February 15 "Sensible Designs: A Selection of Counts Studio Projects"**  
Maria Counts, Assistant Professor  
*College of Architecture, Illinois Institute of Technology*

**14 — February 22 "'Base Falsehoods' and the Genuine Article: The Visual Economy of San Francisco"**  
Amy Lippert, Assistant Professor  
*Department of History, The University of Chicago*

**15 — March 01 "Housing Surrealism: Sert, Matta, Bonet, 1937-1939"**  
Ana María León, Assistant Professor  
*College of Literature, Science, and the Arts, University of Michigan*

**16 — March 08 "Density and Dwelling: Creating Chicago's Courtyard Apartment 1891-1929"**  
Daniel Bluestone, Director, Preservation Studies Program, AMNESP; Professor  
*History of Art & Architecture Department, Boston University*

**17 — March 22 "Alternative Modernisms: Post-1967 Architecture in Jerusalem"**  
Alona Nitzan-Shiftan, Chair  
*Technion Israel Institute of Technology*

**18 — March 29 "Urban Utopia"**  
Luke Leung, PE, LEED Fellow; Director of Sustainable Engineering  
*Skidmore, Owings & Merrill LLP*

**19 — April 05 "Construction Management, Engineering, and Support"**  
David Arditi, Professor and Director, Construction Engineering and Management Program  
*Armour College of Engineering, Illinois Institute of Technology*

**20 — April 12 "The Louvre in Abu Dhabi and the Falcons' Stadium in Atlanta"**  
Matthew Herman, Adjunct Associate Professor  
*College of Architecture, Illinois Institute of Technology*  
Chicago Office Director  
*BuroHappold Engineering*

**21 — April 19 "At the Intersection of Architecture and Engineering: Space and Human Habitat"**  
Edoarda Corradi, Adjunct Professor  
*Department of Architectural and Environmental Engineering, Illinois Institute of Technology*

**22 — April 26 "Architectures of Development: Israeli Construction in Africa, 1960s-1970s"**  
Ayala Levin, Assistant Professor  
*Weinberg College of Arts & Sciences, Northwestern University*

# ANNUAL SYMPOSIUM HIGHLIGHTS

## Overview

The 2nd PhD Student Symposium, *Chicago Schools: Authors, Audiences, and History*, was organized by PhD Candidates Dan Costa Baciu and Daniel Whittaker under the mentorship of Professor and Dean Michelangelo Sabatino. On the first day, award-winning architectural historian Gwendolyn Wright opened the Symposium by delivering a keynote speech at the Chicago Cultural Center. Papers were presented on the second day at S. R. Crown Hall, IIT. That evening, Whittaker organized a dinner for Symposium participants at the Unity Temple (1908), designed by Frank Lloyd Wright in Oak Park, Illinois. On the final day, participants enjoyed two architectural tours: the Ford House (1949), designed by American architect Bruce Goff in Aurora, Illinois, and the Farnsworth House (1949), designed by American architect Bruce Goff in Aurora, Illinois, and the Farnsworth House (1951), designed by Mies van der Rohe in Plano, Illinois.

Photos courtesy of Marcos Petrolí.

## 2nd International Graduate Student Symposium

*Chicago Schools: Authors, Audiences, and History*

November 17–19, 2017  
S. R. Crown Hall, IIT Campus,  
Chicago, IL

Symposium participants in lower core, S. R. Crown Hall.



Participants at the Farnsworth House, designed by Mies van der Rohe in Plano.



Participants in front of S. R. Crown Hall.



Reception and dinner at Unity Temple in Oak Park.



Participants visiting the Ford House, by Bruce Goff in Aurora.



# STUDENT LIFE AND RESEARCH

## Overview of Doctoral Research

PhD students at IIT spend four to six years completing their studies. During their studies, they participate in many social activities from holiday events to the annual Mies van der Rohe birthday party. The integration of a PhD community contributes to a more pleasant learning environment, where students can share ideas and develop proactive behaviors. Because the majority of the students come from different countries, the PhD program promotes cultural diversity and research, both within and beyond American boundaries. The students enrolled in the PhD program explore the historic and contemporary intersections among Architecture, Culture and Technology through two areas of specialized research: History, Theory, and Criticism (HTC), and Technologies of the Built Environment (TBE). Research topics are based on the expertise of our faculty as well as on the interests of our students.

### 1 — Narjes Abbasabadi

*An Integrated Data-Driven Framework for Urban Energy Use Modeling (UEUM) (2014–19)*

### 2 — Mohammed Ali Khesroh

*Engaging Autonomous Species: A Study in the Search of a New Autonomous Construction Method to Serve as a New Design Methodology in Extreme Environments (2016–)*

### 3 — Mohammed H. Alkhabbaz

*Leaping Into Modernity: Architecture and Identity in Saudi Arabia, 1962–1986 (2011–18)*

### 4 — Amjad Alkoud

*Investigating the Impact of Ultra-Tall Building Ordinances on the Future of Major Cities: Chicago and Dubai (2015–)*

### 5 — Omar Almahdy

*Making a Hot-Arid Desert Arab City More Livable: Investigating the Role of Street Design in Enhancing Walkability in Riyadh, Saud Arabia (2015–)*

### 6 — Mehdi Ashayeri

*An Agent-Based Framework for Integrated Modeling of Multi-Scale Urban Energy-Air Quality Systems (2015–)*

### 7 — Ezgi Bay

*Enhancing Natural Ventilation Through Massing: New Possibilities for Turkish Mass Housing in Hot and Dry Climates (2015–)*

### 8 — Dan Costa Baciu

*From Everything Called Chicago School to the Theory of Varieties (2015–18)*

### 9 — Alia Fadel

*Transitional Cultured-Nature: A Comprehensive Framework of Biophilic Analysis Investigating On-Campus Restorative Intervals for Student Stress Mitigation (2013–18)*

### 10 — Syan Frey

*Darwin's Architects: How the Theory of Evolution Shaped the Chicago School of Architecture (2013–)*

### 11 — Mina Geng

*Micro and Vertical Landscape: How the Interior and Vertical Landscape Influence the Microclimate of Building (2017–)*

### 12 — Zahida Khan

*Microclimate in Tall Urban Morphology: Study of Open Public Spaces at Street Level as 'Point of Repose' in the Context of Three Cities—Chicago, Dubai, and Mumbai (2017–)*

### 13 — Yohan Kim

*Façade Retrofits: Exploring the Impact of New Façade Materials and Systems on Energy Performance of Existing Buildings (2017–)*

### 14 — Anat Mor-Avi

*Architecture for the Art of Collaborative Creativity: Engaging Space Attributes as a Catalyst in Forming a Culture of 'WE' for Students and Teachers in Learning Environments (2016–)*

### 15 — Marcos Amado Petroli

*Toward a Civic Monumentality: Arches, Vaults, and Domes in Post-War American Architecture (2016–)*

### 16 — Andres Pinzon Latorre

*The Influence of Courtyards: Thermal Comfort Study in Bogotá, Colombia (2012–17)*

### 17 — Gilberto Osornio Nieto

*Evaluation of Radiant Cooling Systems Based on the Glazing Façade Ratio in Office Buildings for Hot and Warm Climates: Mexico Study Case (2011–18)*

### 18 — Nadia Shah

*From Standardization to Appropriation—A Morphological Study of a Mid-Century Mass Housing Project's Mutation in the Global South (2016–)*

### 19 — Cynthia Vranas

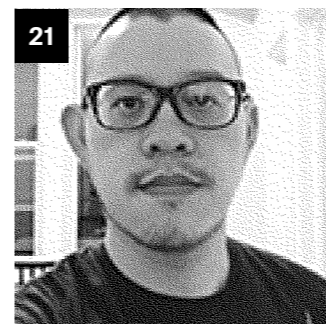
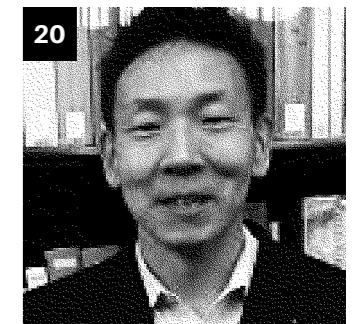
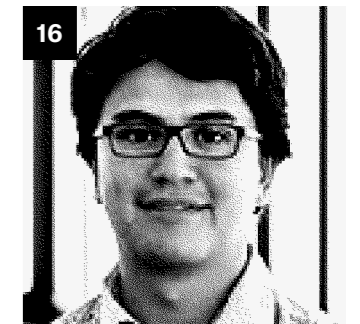
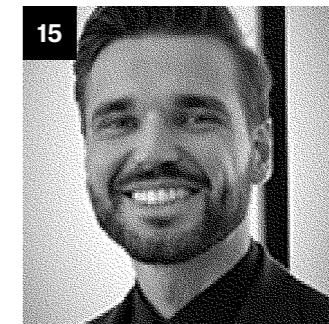
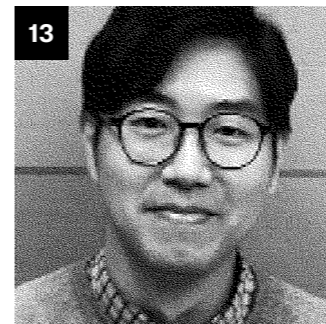
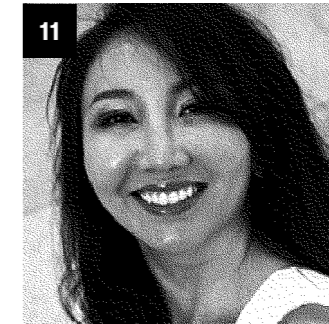
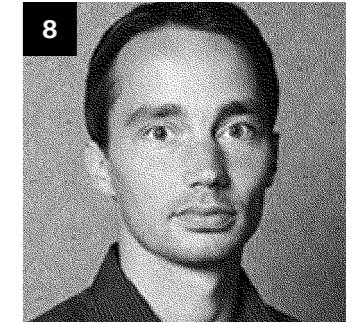
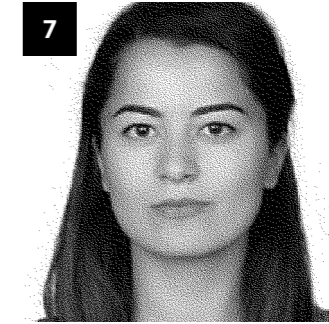
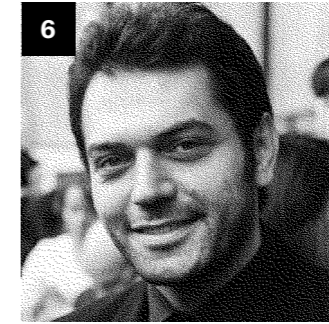
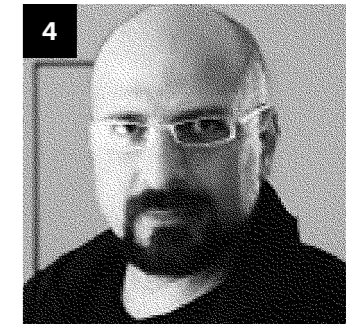
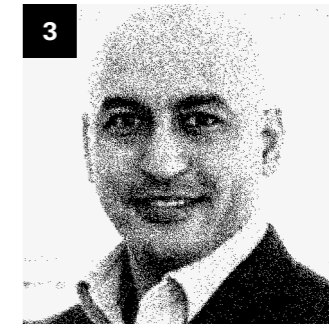
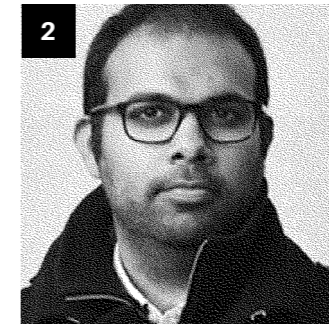
*The Arts and Their Interrelation: Architecture, Music, and Dance in 17th-19th Century France (2012–17)*

### 20 — Dan Whittaker

*House Museums in Chicago: A Re-Examination of Motives, Origins, and Transformations of the Institution (2015–18)*

### 21 — Yen-Hang Yang

*The Experiential Education: The Study of the Students' Learning Outcomes Through 2015 IIT Design/Built Project (2013–)*



# STUDENT LIFE AND RESEARCH

## Building Community

Throughout the academic year, PhD students and faculty take a number of field trips to a host of different places, ranging from professional offices to galleries and libraries. These opportunities allow our students to discover the diverse resources Chicago has to offer, network, and get to know each other.

Photos courtesy of Marcos Petrolí.

PhD Program faculty and students visit the local architectural museum "Building 51."



Dean Sabatino at investiture of the Rowe Family College of Architecture Endowed Chair.



Chicago Schools



PhD Program faculty and students participate in "Garden Dialogues 2017: Caldwell Farm," Bristol, Wisconsin.

PhD Students participating in a celebration at S. R. Crown Hall to honor John Vinci, a Chicago-based American architect who champions architectural preservation.



PhD Program Holiday Party, December 2, 2017. Photo courtesy of Cynthia Vranas.

Marcos Petrolí



Andres Pinzon's defense, November 6, 2017, at 3410 S. State St. Photo courtesy of Andres Pinzon.



PhD students at the exhibition *SOM: Engineering x [Art + Architecture]*, held by Skidmore, Owings & Merrill LLP (SOM).

PhD students visiting the 1982 Charnley-Persky House.



Retirement celebration and inauguration of exhibition *Peter Land: Retrospective*, curated by PhD Candidate Omar Almahdy at S. R. Crown Hall.



John and Jeanne Rowe with Professor and Dean Sabatino. Photo courtesy of IIT.

# STUDENT LIFE AND RESEARCH

## Graduation (2017-18)



Dean Sabatino on stage addressing the graduating class. Photo courtesy of IIT.



Alia Fadel at graduation with Professors Martin Felsen and Ron Henderson. Photo courtesy of Michelangelo Sabatino.

## College of Architecture Excellence Awards

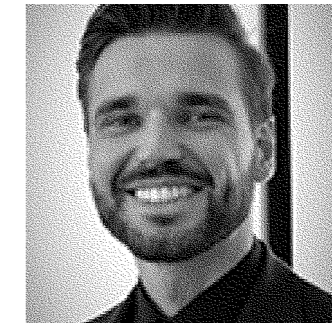
Every year graduating students receive three awards: PhD Program Best Dissertation Award, ARCC King Medal, and Spirit Award.



**Fadel, Alia.** 2017-18 PhD Program Best Dissertation Award—IIT Faculty Selection Committee.



**Alghamdi, Saad.** 2017-18 ARCC King Student Medal for Excellence in Architectural and Environmental Research—Named in honor of the late Jonathan King, co-founder and first president of the Architectural Research Centers Consortium (ARCC), this award is given to one student per ARCC member school. Selection of school recipients is at the discretion of the individual institutions, but is based upon criteria that acknowledge innovation, integrity, and scholarship in architectural and/or environmental design research. The award may be made at either the graduate or undergraduate level.



**Petroli, Marcos.** 2017-18 Spirit Award—Selected by the PhD students in recognition of outstanding contributions to the PhD Program "spirit" of community.

# ACCOMPLISHMENTS

This is a summary of PhD student and PhD alumni accomplishments throughout the 2017–18 academic year:

## Publications

**Azari, Rahman, and Narjes Abbasabadi.** “Embodied Energy of Buildings: A Review of Data, Methods, Challenges, and Research Trends.” *Energy and Buildings* 168 (2018): 225–35. <https://doi.org/10.1016/j.enbuild.2018.03.003>.

**Baciu, Dan Costa, Boris Capitanu, and Eleanor Dickson.** “The Chicago School: Evolving Systems of Value.” Hathitrust Research Center, 2017. <https://pdfs.semanticscholar.org/198d/5650f823eef7369436df80078a-5f2a9b9034.pdf>.

**Hassan, Ahmed Ali.** “The Potential Application of Agro-based Polymers in Building Facades: A Framework of Multi-performance Criteria Matrix for Selecting Optimal Materials by the AHP and TOPSIS Methods.” *Proceedings of BEST5 - The Building Enclosure Science and Technology*, Philadelphia, Pennsylvania, 2018. [https://www.brikbases.org/sites/default/files/Hassan.paper\\_.pdf](https://www.brikbases.org/sites/default/files/Hassan.paper_.pdf).

**Petroli, Marcos.** “Frontón Recoletos (Madrid, 1935) and Kimbell Museum of Art (Fort Worth/TE, 1972): a Structural Metaphor Towards a New Monumentality.” *Proceedings of Interfaces: Architecture, Engineering, Science, Journal of the International Association of Shell & Spatial Structures* (2017): 1–10. <https://www.ingentaconnect.com/content/iass/piass/2017/00002017/00000011/art00015>.

**Petroli, Marcos.** “Mies in Brazil: Beyond Diplomatic Issues Regarding the US Consulate in Sao Paulo, 1957–62.” *Proceedings of XII Docomomo Brazil: Architecture and Urbanism of the Modern Movement* (2017): 1–17. <https://www.12docomomobrasil.com/anais>.

## Presentations

**Alkoud, Amjad.** “On the Impact of Height Limitation Ordinances in Ultra-Tall Buildings.” Poster presented at Council on Tall Buildings and Human Habitat Conference, Dubai, UAE, 2018.

**Almahdy, Omar.** “How Your House is Designed?” Paper presented at Students Educational Forum, University of Illinois at Chicago, 2018.

**Baciu, Dan Costa.** “Chicago Schools: 150 Years of Publication History.” Conference Talk, Chicago Colloquium for Digital Humanities and Computer Sciences, Chicago, Illinois Institute of Technology, November 18, 2017.

**Baciu, Dan Costa.** “Collaborating with Computer Scientists.” Panel Development, Digital Humanities Summer Institute Unconference, Victoria: University of Victoria, June 12–16, 2017.

**Baciu, Dan Costa.** “Evaluating the History of the Chicago School: Why Supervised Algorithms?” Conference Talk, Hathitrust Research Center UnCamp, Berkeley, University of California, January 25–26, 2018.

**Baciu, Dan Costa.** “Mining Important Textual Content: A Novel Approach Mimicking Human Associative Memory.” Conference Talk, Digital Humanities Summer Institute Colloquium, June 12–16, 2017.

**Baciu, Dan Costa.** “Sigfried Giedion’s Followers: Historiography and the Concept of Departure.” Conference Talk, How to Narrate the History of Architecture, Haifa, Technion Israel Institute of Technology, May 7–8, 2018.

**Baciu, Dan Costa.** “The Chicago School: Evolving Systems of Value.” Conference Talk, Digital Architectural History, Zurich, ETH, February 2018.

**Baciu, Dan Costa.** “The Chicago School: Quantitative and Qualitative Data for a Complex Systems Analysis.” Conference Talk, Digital Humanities Summer Institute Colloquium, Victoria: University of Victoria, June 12–16, 2017.

**Baciu, Dan Costa.** “The Chicago School: Wikification as the First Step in Text Mining in Architectural History.” Digital Humanities Summer Institute Colloquium, Victoria, University of Victoria, June 12–16, 2017.

**Baciu, Dan Costa.** “The Digital Bride and Digitization Takes Command.” Conference Talk, *Congress of the Humanities and Social Sciences*, Regina, University of Regina, May 26–June 1, 2018.

**Baciu, Dan Costa.** “The Pareto Distribution: From Empirical Proposition to Theory.” Conference Talk, Networks of Power and Knowledge, Ann Arbor, University of Michigan, March 9–10, 2018.

**Fadel, Alia.** “The Application of Observation-Based Comprehensive Framework of Biophilic Analysis in Investigating On-Campus Restorative Intervals.” Paper presented at the The University of Chicago, Chicago, Illinois, 2018.

**Mor-avi, Anat.** “The Spirit of ‘WE’ in Learning Environment – ‘WE LEARN’ - a Space for Students and Teachers to Become.” Conference Presentation, Grand Rapids, Michigan, 2018.

**Mor-avi, Anat.** “The Spirit of ‘WE’ in Learning Environment – ‘WE LEARN’ - a Space for Students and Teachers to Become.” Paper presented at Transitions, Melbourne, Australia, University of Melbourne, 2018.

**Shah, Nadia.** “Housing for All in India—as a Sustainable Development Goal.” Paper presented at Year of India Conference, Kennesaw, Georgia, Kennesaw State University, 2018.

**Whittaker, Daniel.** “Conserving Ando’s Concrete in Chicago.” Paper presented at the Association for Preservation Technology (APT) Western Great Lakes Chapter & Docomomo US/Chicago, Illinois Institute of Technology, Chicago, Illinois, 2018.

**Whittaker, Daniel.** “Pursuing elusive historical narratives in Chicago: Adventures in the Archives.” Conference Talk, Washington University in Saint Louis, St. Louis, Missouri, 2018.

**Whittaker, Daniel.** “The Clarke House: A Politicized History.” Paper presented at the Architecture and Civil Engineering Conference (ACE), Singapore, May 14–15, 2018.

## Awards, Fellowships, Grants, and Scholarships

**Abbasabadi, Narjes.** 2nd Place. Race to Zero Student Design Competition, US Department of Energy, National Renewable Energy Laboratory, Golden, Colorado, April 20–22, 2018.

**Abbasabadi, Narjes.** “Hard Work, Dedication and Commitment to Excellence Award.” Adrian Smith + Gordon Gill Architecture, Chicago, Illinois, 2018.

**Alkoud, Amjad.** Scholarship Winner. Construction Specification Institute, Chicago, Illinois, 2018.

**Baciu, Dan Costa.** “Sigfried Giedion’s Chicago School: A Midpoint in 150 Years of Reception History.” Swiss National Science Foundation, Grant Nr. 174883.

**Khan, Zahida.** Travel Grant. International Doctoral Workshop, Tongji University, Shanghai, China, July 1–13, 2018.

**Kim, Yohan.** 1st Place (\$5,000). Chicago Committee on High-Rise Buildings Scholarship, Chicago, Illinois, 2018.

**Petroli, Marcos.** “Student Delegate.” Chicago Forum on Global Cities, Chicago, Illinois, June 6–8, 2018.

**Shah, Nadia.** Travel Grant. International Doctoral Workshop, Tongji University, Shanghai, China, July 1–13, 2018.

## Defended Dissertations

During this past year, six PhD students successfully defended their dissertations.

**Alkhabbaz, Mohammed H.** “Leaping into Modernity: Petro-Islamic Architecture in Saudi Arabia, 1962–1986.” PhD diss., Illinois Institute of Technology, 2018. Committee: Michelangelo Sabatino (chair), Mahjoub Elnimeiri, Maureen Flanagan, Robert Krawczyk, and Alla Vronskaya.

**Baciu, Dan Costa.** “From Everything Called Chicago School to the Theories of Varieties.” PhD diss., Illinois Institute of Technology, 2018. Committee: Michelangelo Sabatino (chair), Harry F. Mallgrave, Vedran Mimica, and Alla Vronskaya.

**Fadel, Alia.** “Transitional Cultured-Nature: A Comprehensive Framework of Biophilic Analysis Investigating On-Campus Restorative Intervals for Student Stress Mitigation.” PhD diss., Illinois Institute of Technology, 2018. Committee: Martin Felsen (chair), Nicole Ditchman, Ronald Henderson, Michelangelo Sabatino, and Christena Nippert-Eng (external).

**Osornio Nieto, Gilberto.** “Evaluation of Radiant Cooling Systems Based on the Glazing Facade Ratio in Office Buildings for Hot and Warm Climates: Mexico Study Case.” PhD diss., Illinois Institute of Technology, 2018. Committee: Matthew Herman (chair), Robert Krawczyk, Michelangelo Sabatino, Brent Stephens, and Bernardo Vazquez (external).

**Pinzon Latorre, Andres.** “The Influence of Courtyards: Thermal Comfort Study in Bogota, Colombia.” PhD diss., Illinois Institute of Technology, 2017. Committee: Peter Land (chair), Matthew Herman, Michelangelo Sabatino, and Brent Stephens.

**Vranas Olsen, Cynthia.** “The Palais Garnier: Toward an Architecture of Dance and Music in XIX Century France.” PhD diss., Illinois Institute of Technology, 2017. Committee: Joseph Clark (co-chair), Michelangelo Sabatino (co-chair), RuthAbramovich, Dirk Denison, Vedran Mimica, and John Snapper.

## Visiting Scholar Spring 2018

**Bian, Simin.** PhD Candidate, Tsinghua University. She received her PhD with Professor Zhu Yufan of Tsinghua University in September 2019.

## Recent Alumni News

Graduates of IIT’s PhD Program in Architecture typically pursue academic careers in universities, obtain positions in research institutions, or return to professional practice.

**Alghamdi, Saad.** Former Assistant Professor in Architecture, College of Engineering, Alfaisal University, Riyadh, Saudi Arabia. Currently Deputy CEO, Aseer Development Authority, Saudi Arabia.

**Alkhabbaz, Mohammed H.** Assistant Professor in Architecture, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia.

**Baciu, Dan Costa.** Postdoctoral Student, University of California, Santa Barbara.

**Hassan, Ahmed Ali.** Architect & Facade Consultant, Adrian Smith + Gordon Gill Architecture, Chicago, Illinois.

**Jones, Kristin.** Co-curator of the exhibition “Mies’ Pedagogy: Visual Training, Collages, and Space Models,” Mies van der Rohe Society exhibit, Illinois Institute of Technology, Chicago, March 22, 2018.

**Osornio Nieto, Gilberto.** Senior CFD engineer at BuroHappold in Leeds, England.

**Vranas Olsen, Cynthia.** Director of Mies van der Rohe Society, College of Architecture External Affairs, Illinois Institute of Technology, Chicago.

# INTERVIEW WITH PHD PROGRAM DIRECTORS — PAST AND PRESENT

A View from Above: The Transformation  
of IIT's Main Campus. Exhibition curated  
by Michelangelo Sabatino (S.R. Crown  
Hall, April 2015). Photo courtesy of Kejia  
Liu (CoA)



# MAHJOUB ELNIMEIRI

Professor, Founder and Former Director of the PhD Program in Architecture, College of Architecture, Illinois Institute of Technology, 1996–2013

**[MP]** As the founder of the PhD program and its director for about two decades, please share with us a brief history of the program and tell us what made the college decide to establish a PhD Program in Architecture in Chicago in the late 1990s.

**[ME]** Originally, the initiative of a PhD Program came from a collective will among international master's students from IIT, which were willing to develop research in the United States and bring this knowledge back to their home countries. After the creation of a PhD Program, most of them would be able to apply for doctoral scholarships from federal governments in their homelands. Besides, holding a PhD degree would give them more opportunities for teaching and developing research in their home countries.

Therefore, I moved this idea forward, and after visiting some of the important architectural graduate programs in this country, such as MIT, Harvard, UC Berkeley, and Georgia Tech, I concluded that our PhD program could explore research in Architecture, but with close interaction with engineering and technology (i.e., a program that should focus on architectural inquiries, but utilizes engineering and scientific methodologies). The idea for this type of research seemed to be consistent with the great legacy of Mies van der Rohe. As you might have known, at that time, we had a wonderful master's thesis program, led by Myron Goldsmith and David Sharpe, which I must say, had a big influence on my thinking about the PhD program. With the help and support of some IIT faculty, within and outside our college, I was able to establish the program. Finally, I would like to add that we managed to attract a good number of excellent students, who had produced significant work and continued to advance architectural research after graduation.

**[MP]** Professor, you mentioned that in the beginning the goal was to develop doctoral research in the United States, and then spread this knowledge to other countries. But why did some of the architectural firms in Chicago start to be interested in the research developed at IIT?

**[ME]** Our first research projects evaluated the structural components and energy efficiency of high-rise and large-scale buildings. We tapped on the rich resources of the master's thesis program, that I mentioned earlier. Look at Edward Windhorst's book *High-rise and Long-span Research at Illinois Institute of Technology: The Legacy of Myron Goldsmith and David Sharpe* (Chicago: Illinois Institute of Technology, 2010). The program at IIT had wonderful instructors, who were all practicing architects and engineers, such as the architects Goldsmith and Sharpe, and the engineer Fazlur Kahn. At that time, these three faculty members were working at the architectural firm Skidmore, Owings & Merrill (SOM). I had the pleasure and the honor to join them toward the tail end of the program. SOM and IIT during that time were at the forefront of many significant high-rise advances worldwide. Due to the availability of commissions in Chicago for high-rise buildings, many local firms naturally hired IIT students that were doing research in this area. After all, we realized that doctoral research would eventually become one of the legacies of our school.

**[MP]** You are an engineer by education and training with expertise in structural engineering. You have also been an Associate Partner at Skidmore, Owings & Merrill, prior to joining IIT College of Architecture as a faculty member. How did you see the overlap between architecture and engineering and how should the PhD students in Architecture address that?

**[ME]** The complete integration of architecture and engineering can lead to a rational shape of a building or an object. In the case of the collaboration between architects and engineers, there is the emblematic example of Mies and the structural engineer Frank Kornacker; the latter was also a friend of Mies. Due to such cooperation, buildings like S. R. Crown Hall (1950–1956) could achieve elegant proportions. Currently, I believe that the architectural profession is reaching a moment of crisis, meaning that the form of the built environment is moving away from structural and non-arbitrary concerns. Moreover, issues of climate change and clean energy became serious matters that cannot be dealt with based on irrational and non-engineering logic, but only on an earnest partnership. Therefore, this is an opportunity for PhD students to work on the benefits from this collaboration between architecture and engineering, which can influence a shift in a more interdisciplinary curriculum of schools and the future of higher education.

Interview conducted by PhD Candidate Marcos Petrolí, January 14, 2019.

# HARRY FRANCES MALLGRAVE

Distinguished Professor Emeritus, Former Director of the PhD Program in Architecture, College of Architecture, Illinois Institute of Technology, 2013–2014

**[MP]** As director of the PhD program in 2013, you initiated the specialization in History, Theory, and Criticism (HTC). Why did you select the HTC track, and what does this specialization add to the PhD program?

**[HM]** The HTC specialization has always been the centerpiece of a doctoral program in architecture, although with some interesting nuances. In the 1960s one of the few schools to offer a PhD program was Cambridge University, and its orientation was history and theory, as seen in such early graduates as Peter Eisenman and Reyner Banham. I believe the first American programs in HTC appeared in the 1970s. Cornell University, under Colin Rowe, had a focus on urban planning, as did MIT with its Urban Institute. The first program at Princeton had a sociological orientation, but that changed when Anthony Vidler arrived in the 1970s with his interest in theory. At the University of Pennsylvania there were two programs in the late-1970s: one in history/theory and the other in urban planning. When I enrolled in the program in 1978, however, there was only Marco Frascari and myself in the HTC program and no one in the other.

The PhD Program at IIT, founded in the 1990s, was unique in that its focus was neither HTC nor urbanism, but based on tall-building design and engineering. It also had a special partnership with Skidmore, Owings & Merrill, which often allowed doctoral candidates first-hand experience in the workplace. As the evolution of more sophisticated computer modeling began to take over the structural engineering of tall buildings around the turn of the century, the program, under Mahjoub Elnimeiri, began to make a transition into energy-efficiency or green design-technologies.

When Wiel Arets assumed the deanship in 2012, he, with his European background, asked me in the following year to introduce an HTC component to the program. There was an interesting quandary, however. Whereas deep historical analysis of any person or topic will always remain a viable field of study, both theory and criticism—in my view—had collapsed around the turn of the century through the excesses of semiotics, poststructural, and postmodern thought. The Dutch, however, also had a somewhat unique position with respect to theory, with the humanistic legacy of architects such as Herman Hertzberger and Aldo van Eyck, the last of whom I worked with at Penn. This legacy has sometimes been portrayed as structuralism (stemming from van Eyck's admiration for the anthropologist Claude Lévi-Strauss), but the word is totally misleading with respect to how these architects placed such a high value on the human experience of design. I believe we have a comparable field of study emerging today with the newer phenomenological models stressing the dynamic and mutual interplay of the human organism with the environment in both its social and physical dimensions—predicated on the latest biological modeling of perception and its emotional underpinnings.

**[MP]** How do you see the availability of numerous primary sources and iconic buildings in Chicago contributing to the quality and the variety of research topics?

**[HM]** Traditionally, doctoral research on historical themes has not been tied to a specific location, but it is often done through access to archival materials. In my case of doctoral research, I consulted archives and libraries in Zurich, Dresden, Hamburg, and London. It of course helps to have these materials nearby, but today a good percentage of these types of documents are available on the internet. One can, of course, offer a fresh perspective on the history of Chicago architecture, but the amount of historical research that has been done on figures such as Sullivan, Wright, and Mies make it very difficult to uncover something new, which is the essence of doctoral research. There are, however, new themes within Chicago that might be explored. The other thing to take note of with respect to historical research is that it is always situated within a larger international context. This is especially true today, but also in the past. Hence, historical research demands a reading facility with several languages. All doctoral research goes online, and a poor dissertation is readily known to everyone knowledgeable in the field.

One of the good things about the PhD program at IIT is that so many of its students come from other countries, and they bring their different cultural perspectives with them. I am quite sure this legacy is continuing under Michelangelo Sabatino, and a thriving PhD program is one that is strong in several different areas.

Interview conducted by PhD Candidate Marcos Petrolí, February 6, 2019.

# MICHELANGELO SABATINO

Professor and Director of the PhD Program in Architecture, former Dean, Inaugural John Vinci Distinguished Research Fellow, College of Architecture, Illinois Institute of Technology, 2014–2017; 2019–

**[MP]** You directed the PhD program between 2014 and 2017 up until your appointment as Dean of the College of Architecture. What are some current challenges to the profession and academia that you think doctoral research in architecture should address?

**[MS]** Opportunities in the form of challenges abound. With climate change increasingly a daunting reality, applied research initiatives should be directed to minimize the carbon footprint of our new and existing building.

Dr. Rahman Azari, the current director of our PhD Program, is well equipped to lead this area of research with his interest in materials, skins, buildings, and cities. Architects and engineers should bring their distinct strengths when working collaboratively on buildings that are simultaneously beautifully designed and high performance. I believe Tesla automobiles are the gold standard because beautiful design coexists with sustainable technology. Dr. Brent Stephens, the Chair of the Department of Civil, Architectural, and Environment Engineering (CAEE) in IIT's Armour College of Engineering, continues to play an active role in mentoring our students.

As far as history- and theory-based scholarship is concerned, I believe that interdisciplinary investigations seeking to illuminate the complex relationship between architecture and cultural, economic, political, and social forces of the past can help us better understand the complex challenges of the present and future.

**[MP]** As an architectural historian who relocated here in 2014, a little more than four years ago, what do you think are opportunities to rewrite the history of Chicago's buildings and sites? Is there anything more to say about Ludwig Mies van der Rohe?

**[MS]** We refer to the writing of history as historiography because understanding the past not only requires gathering facts but also interpreting events and ideas. There are numerous scholarly books about Ludwig Mies van der Rohe that focus on various aspects of his distinguished career as educator and architect; however, a missing perspective is a study focused exclusively on the work he produced in the Chicagoland from his arrival in 1938 to his death in 1969. With few exceptions, such as the Barcelona Pavilion (1929) and Tugendhat House (1930) in Brno, one could argue that his most consequential work—his IIT campus and buildings, Farnsworth House, and 860–880 Lake Shore Dr.—were realized in the Chicagoland.

By carefully analyzing three decades of sustained practice in his adoptive city, perhaps we can discover ways in which local conditions impacted the design and realization of buildings that had a global impact. It is worth recalling the proximity of Gary, Indiana, where steel was produced during the post-World War Two years while European cities and ports lay in ruins. Focusing on local approaches to building and construction might shed new light on Mies' design process. As I have learned from my ongoing research, local conditions reveal circumstances and dynamics behind the design and realization of the IIT campus within the Bronzeville neighborhood.

**[MP]** Under your leadership, the Architecture Research Forum lecture series was launched along with the inaugural PhD student-run symposium Petroleum Modernism: Architecture and Identity in the Gulf, which was held on October 13, 2016. How do you see the PhD program benefitting from an annual student-run symposium and *Prometheus, Journal of the PhD Program in Architecture*, the accompanying peer-reviewed publication?

**[MS]** As an educator and academic leader, I believe it is very important to empower our PhD students to organize and host an annual peer-reviewed symposium because it provides experience for those who pursue academic positions. Writing calls for papers, evaluating abstracts, and curating and editing content for publications are all tasks that require excellent written skills. Hosting a symposium requires communication and organizational skills. Cumulatively, organizing and hosting symposia develops a skillset that is important if one wishes to thrive in academic research environments.

**[MP]** When you were appointed as the new director of the PhD program, you promoted the idea of a research environment that explored the intersections among Architecture, History, and Technology. Please explain.

**[MS]** Since IIT is a science and technology-rich university, soon after I was appointed director, I began to think of ways to strategically leverage this tradition to shape the kind of research we can conduct in our PhD program in architecture. History can illuminate the ways in which we understand the relationship between technology and architecture. Architects typically gravitate toward qualitative research approaches and engineers toward quantitative ones. I like to recall Peter Rice's distinction between the "inventive" engineer and the "creative" architect (see his "The Role of the Engineer" in *The Engineer Imagines* (London: Artemis, 1994)). We should foster a research environment in which the two approaches can find mutual support.

Interview conducted by PhD Candidate Marcos Petroli, December 20, 2018.

# RAHMAN AZARI

Assistant Professor, Former Director of the PhD Program in Architecture, College of Architecture, Illinois Institute of Technology, 2017–19

**[MP]** Please tell us about the Technologies in Built Environment (TBE) track of the PhD program. How does this track overlap with the History, Theory, and Criticism track (HTC) of the program?

**[RA]** Technology has been the center of architecture throughout history; and the history of architecture is the history of how architects translated the era they lived in, with all its features from culture and religion to social and technological developments, into buildings and space. I believe the research in technology and history are closely tied and interrelated. Technologists and technology researchers need to know about the history in their field as they build upon the past developments to create new ones. Without knowing the history, the researcher in a technology field runs the risk of re-inventing the wheel. One needs to know the history to understand what has been done and what has not been done in their area of research, and what is the level of sophistication in existing knowledge and developments, that is available to them to use and to build upon. That is why PhD students must do a "literature review" in the early stages of their research. Literature review is a survey of the past and present knowledge. Learning about history also helps the researcher provide insight into how social, technological, economic, and ecological developments have interacted in the past; therefore, it widens the researcher's view of the scene. In my opinion, a research project cannot start without the researcher first becoming kind of a historian in a broad, rather than discipline-specific, sense. On the other hand, a historian can connect the dots and explain how social and technological developments in the past were related, what caused them and how they affected other developments that happen after them.

**[MP]** What are the current challenges and opportunities of the PhD Program? And how do you think that the PhD community can help?

**[RA]** Our challenges are not unique to us. A main challenge, I believe, is to convince the PhD students to take intellectual risks and challenge themselves to go beyond their intellectual comfort zone—to go beyond their field and look into complex problems that would need interdisciplinary approaches to be solved. Unlike engineering or science, architecture students often work on projects that are not funded by external grants. This means that students would need to be more proactive in developing doctoral projects that are interdisciplinary in both scope and methodology.

**[MP]** The PhD program's 3rd annual symposium focused on Buildings, Cities, and Performance. What do you think the emergent areas of research within the field of building technology are?

**[RA]** I believe we're experiencing a shift in sustainability research toward looking into problems from an urban lens. The various areas of urban sustainability research, I think, need to integrate to help solve the problems of cities in more holistic ways. We came up with "Buildings, Cities, and Performance" as a brand for the 3rd and 4th symposiums to emphasize the multiple scales of environmental problems we are dealing with.

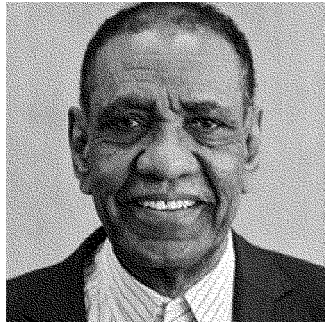
**[MP]** As the former Director of the PhD Program and an active scholar, how do you see that the future research in applied sciences can benefit both the academic and professional worlds?

**[RA]** The field of applied science is defined by its aim to solve research problems of the modern world with practical solutions. Some important, and immediate, problems that currently need to be addressed are climate change, global warming, and growing energy use. So it's vital for researchers and PhD students to understand how built environments contribute to these problems and how we can solve them creatively, holistically, and in collaboration of other disciplines. We, as architecture researchers, have a responsibility toward achieving carbon-neutral cities.

Interview conducted by PhD Candidate Marcos Petroli, September 28, 2019.

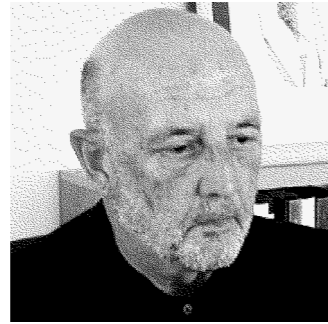


# PHD DIRECTOR BIOGRAPHIES

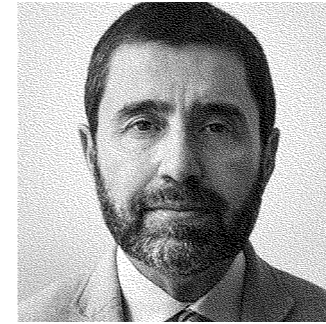


**Professor Mahjoub Elnimeiri** worked with the architectural and engineering firm Skidmore Owings & Merrill (SOM) in Chicago, from 1979–1990. During his vast experience at SOM, he worked closely with architectural partners in the design development of many outstanding projects. After leaving SOM as an Associate Partner and Senior Structural Engineer, he joined the Illinois Institute of Technology in Chicago as a full professor with tenure in the College of Architecture, a position he has held since 1990. In 1997 he founded the PhD program in Architecture, and directed it until 2013. He brought to the college significant research funding through research and design projects. He also expanded the research to include issues of sustainability, material technology, and energy. He is the Founder and President of Eeciplus Engineers International, in Milwaukee, Wisconsin, (1991 to present). Eeciplus is a progressive, cutting edge, state-of-the-art structural engineering practice, specializing in the area of high rise and long span. Professor Elnimeiri has been a registered professional engineer since 1978. He is a member of many international professional societies and organizations, and author of many publications. He is a frequent participant in international conferences, including being a keynote speaker numerous times. He occasionally contributes to the media, through articles or interviews in newspapers and appearances on public television. He is a recipient of a few prestigious awards, such as the ASCE state of the art award, 1988.

Prof. Elnimeiri holds: BSc (Honors) in Civil Engineering from University of Khartoum, Khartoum, Sudan. D.I.C. and MSc in Structural Engineering from Imperial College, University of London, London, United Kingdom. PhD in Structural Engineering and Structural Mechanics from Northwestern University, Evanston, Illinois.



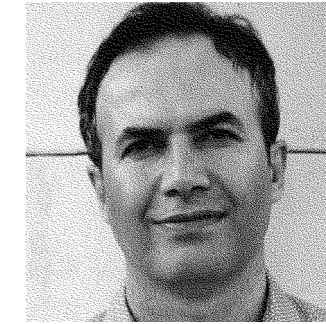
**Harry Francis Mallgrave** is a Distinguished Professor Emeritus from Illinois Institute of Technology and an Honorary Fellow of the Royal Institute of British Architects. He received his PhD in Architecture from the University of Pennsylvania and has enjoyed a career as a scholar, translator, editor, and architect. In 1996 he won the Alice Davis Hitchcock Award from the Society of Architectural Historians for his intellectual biography of Gottfried Semper. He has published more than a dozen books on architectural history and theory, including both monographs and histories of theory. His last three books have dealt with the insights made by the new humanities and biological sciences into how we experience architecture through the process of embodied simulation. He is currently at work on a book tentatively titled *Building Paradise*, which will be a historical review of how the notion of paradise—from the garden to the city—has been interpreted by architects and others. If the idea of utopia has always been the imposition of a social superstructure to correct human shortcomings, the idea of paradise (raised in the writings of Alvar Aalto) is rather an inner yearning for a better life, environment, and happiness.



**Michelangelo Sabatino** trained as an architect, preservationist, and historian. Professor Sabatino serves as director of the PhD Program at IIT Architecture Chicago. From 2017–2019, he served as the Rowe Family College of Architecture Endowed Chair Dean and is currently the inaugural John Vinci Distinguished Research Fellow.

Sabatino earned a Laurea in Architecture at the Università IUAV di Venezia and a doctorate in the Department of Fine Art, University of Toronto, and held a post-doctoral fellowship in the Department of History of Art + Architecture, Harvard University. Sabatino taught history and theory of architecture at Yale University and the University of Houston before his appointment to IIT in 2014.

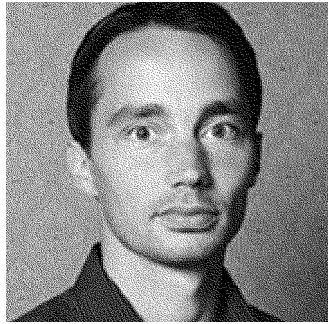
Sabatino publishes regularly in scholarly journals and anthologies. His monograph *Pride in Modesty: Modernist Architecture and the Vernacular Tradition in Italy* (2011) won critical acclaim and multiple awards, including the Modern Language Association's *Aldo and Jeanne Scaglione Prize for Italian Studies*, the Society of Architectural Historians' *Alice Davis Hitchcock Award*, and the American Association of Italian Studies' *Best Book Award, 20th and 21st Centuries*. He recently co-authored *Canada—Modern Architectures in History* (2016) with Rhodri Windsor Liscombe, and co-edited with Ben Nicholson, *Avantgarde in the Cornfields: Architecture, Landscape, and Preservation in New Harmony* (2019). [michelangelo-sabatino.com](http://michelangelo-sabatino.com)



**Rahman Azari** is an assistant professor, former director of the PhD program, and founding director of Building and Urban Environmental Modeling (BUEM) Lab at Illinois Institute of Technology College of Architecture. Azari's research centers on environmental life-cycle impacts of built environments, innovative materials for energy production and carbon sequestration, and urban environmental modeling. In 2018, Azari received the American Institute of Architect's prestigious Upjohn research grant for his collaborative invention of "Artificial Leaf-based Façade Cladding Systems for Energy Production and Carbon Sequestration." In 2019, Azari was listed as "Researchers to Know" by the Illinois Science and Technology Coalition. Azari has extensively published research in various journals such as *Energy and Buildings*, *Building and Environment*, and *Journal of Management in Engineering*. He has also guest-edited the journal of *Energy and Building's* special issue on "Embodied Energy and Carbon Efficiency." Azari is also a recipient of several teaching awards in the field of sustainable design. For two consecutive years in 2016 and 2017, Azari served as faculty co-sponsor to student design projects winning COTE Top Ten competitions by the American Institute of Architects (AIA) and the Association of Collegiate Schools of Architecture (ACSA). In 2016, *Metropolis* magazine listed a course co-taught by Azari as one of the "7 best sustainable design courses in America." This selection was made based on the results of Architecture 2030's Curriculum Project's competition.

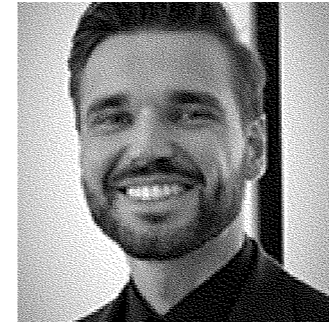
With a background in architecture, Azari holds a PhD in Built Environment (Sustainability track) from the University of Washington in Seattle (2013).

# EDITOR BIOGRAPHY



“United we stand” inspires not only collaborative spirit but also a new research direction in the study of urban life and diversity. “United” in this context means listening to everyone and learning to coordinate efforts in the making and spreading of culture. Through art, art shows, creative writing, architecture, criticism, editorial work, photography, teaching, data science, supercomputing, urbanism, as well as doctorate and postdoctorate, **Dan Costa Baciu** has probed and shaped this research direction. His doctoral project “From Everything Called Chicago School to the Theory of Varieties” (IIT, 2018) was awarded cross-national grants and science support, paving the path to the WhatEvery1Says Interpretation Laboratory at UC Santa Barbara. There, Dr. Baciu brings together an entire interdisciplinary team of designers, data scientists, urban geographers, historians, English scholars, and beyond. In a time of rapid urbanization, data overload, and revolutionary wealth, as Alvin and Heidi Toffler contemplated, understanding how culture evolves on a large scale will prove increasingly important. When fake news shakes the modern world, and when companies are no longer valued for their transaction value alone but also for the data that they amass, we can no longer refrain from studying how people estimate the value of the messages that they read, write, rewrite, and share. Culture is the only means by which we can strike a balance between revolutionary wealth on one hand and decaying ecosystems, losses in biodiversity, and depletion of natural resources on the other. Understanding culture on a global scale can no longer be postponed.

# CURATOR BIOGRAPHY



**Marcos Petroli** trained as an architect, urban planner, and architectural historian whose research addresses intersections between culture, architecture, and technology in the rise of modern civic monumentality in the Americas. Currently, he is a PhD candidate at the Illinois Institute of Technology and a Board Member of Docomomo US/Chicago, a branch of the global preservationist organization concerned with the heritage of modern architecture.

He has taught design studio, as well as history and theory of architecture, in Brazil at both Caxias do Sul University and Vale do Taquari University, and more recently at Judson University in Elgin, Illinois, and Washington University in St. Louis, Missouri. He is a recipient of “Science Without Borders,” a fully funded Doctoral Fellowship, and has received awards and fellowships in research and architectural design. In 2017, he was awarded a summer residency as part of the Canadian Centre for Architecture’s Doctoral Students Program in Montreal, Quebec.

Marcos published and presented papers in Brazil, China, France, Germany, Italy, and the United States. His works include “Mies in Brazil: Beyond Diplomatic Issues Regarding the US Consulate in Sao Paulo, 1957–62,” published in the proceedings of the 12<sup>o</sup> *Seminário Docomomo Brasil* (Uberlandia, MG, Brazil, 2017), as well as “*Frontón Recoletos* (Madrid, 1935) and Kimbell Museum of Art (Fort Worth, TE, 1972): A Structural Metaphor Towards a New Monumentality,” presented at the IASS 2017: Interfaces—Architecture. Engineering. Science. (Hamburg, Germany, 2017).

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For detailed information about our faculty, current students, and how to apply, please visit the PhD webpage of our College of Architecture website, [arch.iit.edu](http://arch.iit.edu), and write to: Michelangelo Sabatino, Professor + Director of the PhD Program at [msabatin@iit.edu](mailto:msabatin@iit.edu).

**Why did we select Prometheus as the symbol and masthead of our journal? He was the irreverent Titan who stole fire to pave the way for the advancement of humankind. From our vantage point in Chicago, we understand that fire is both a tool for destruction and creation. The Great Fire of 1871 leveled the city and provided Daniel H. Burnham and Edward H. Bennett with a reason to devise the Plan of Chicago (1909). Without the fire of modern blast furnaces, the steel girders and supporting beams in our Ludwig Mies van der Rohe-designed S. R. Crown Hall would not have been possible.**

Michelangelo Sabatino, Professor + Director PhD Program in Architecture,  
Inaugural John Vinci Distinguished Research Fellow

